# FINAL ENVIRONMENTAL IMPACT STATEMENT

for the **Proposed** 



Tracy Station, Nevada



Volume II: Appendices

September 1994

# U.S. DEPARTMENT OF ENERGY

# APPENDIX A. **Environmental Impact Assessment Methodology**

# APPENDIX A: ENVIRONMENTAL IMPACT ASSESSMENT METHODOLOGY

This Environmental Impact Assessment Methodology presents criteria used during the preparation of the Environmental Consequences chapter (Chapter 4) of the FEIS. The methodology accounts for the various impacts that affect the biological, physical, and sociocultural environment. Impacts can be classified into five types: direct, indirect, short-term, long-term, and cumulative. These types of impacts are interdependent; there can be long-term direct impacts, short-term cumulative impacts, etc. It is important to identify the types of impacts so that reviewers and decision makers are able to make sound, reasoned decisions.

Direct impacts have immediate results. An example would be the loss of habitat caused by a construction project. Indirect impacts are the consequence of direct impacts and are not a direct response to the action. Indirect impacts are those impacts that can be viewed as secondary consequences of the action. In the example of habitat loss from a construction project, the indirect impacts may be a reduction in wildlife populations. Indirect impacts may be difficult to identify because their relationship to direct impacts may not be easily established, obvious, or may appear only in the distant future, or not at all. Often, there is little distinction between indirect impacts, particularly in the long-term, and cumulative impacts. Cumulative impacts are a summation of the impacts related to the action being evaluated and concurrent actions that are similar to or in close proximity to the action. Cumulative impacts often do not become apparent until after the action has been taken.

Short-term impacts occur for a relatively short time and then abate or attenuate to levels that are of little or no concern. An example of a short-term impact would be erosion from a construction site, which will cease entirely after construction, or be reduced to minimal levels by appropriate mitigation. Long-term impacts occur for a relatively long time or manifest at some future time. To ensure that the full impact of an action is evaluated, each impact type is considered.

Some factors used to determine the type and significance of impacts are geographic extent, duration and frequency, likelihood, and magnitude of the impact. The geographic extent of an impact considers how widespread the impact might be. The duration and frequency of an impact refers to whether the impact is a one-time event, intermittent, or chronic. The likelihood of an impact is simply whether or not it is reasonable to expect that the impact is likely to occur.

The magnitude of an impact is an intensity factor that is also a reflection/summation of the other three factors. If the magnitude of an impact is large, the other factors become less important in determining whether or not the impact is significant. Additionally, if the magnitude is not large or high, there may not be any significance to the impact's occurrence regardless of how widespread it is, or how often it occurs.

Specific issues and various indicators used to measure potential impacts are identified for each section of the Environmental Consequences chapter. Issues were analyzed to determine if any impact could be expected and indicators were assessed to evaluate the magnitude of the impact.

#### SETTING

#### **Issues**

Impact of design composition (including visual appearance; site surroundings; architectural techniques; view of unsightly areas; loading/unloading facilities; storage facilities).

Impact on environmental amenities (including land form alterations; unique natural features).

#### **Indicators for Measuring Impacts**

Results of visual quality ranking system.

#### ATMOSPHERIC CONDITIONS

#### **Issues**

Impacts from the generation and dispersion of contaminants (including synergistic/additive effects; downwind land uses), such as for:

- coal dust;
- particulate matter;
- ozone emissions;
- carbon dioxide;
- sulfur dioxide; and
- oxides of nitrogen.

Contribution to global warming.

Contribution to acid rain levels.

Impacts of any increase in fog.

Impacts of decreased visibility.

Impact from emissions of radioactive, pathogenic, hazardous, or toxic pollutants, including areas affected, long-term considerations, and the effect of control measures.

Impact of fugitive air emissions of dust.

Impact of fugitive air emissions of exhaust from facility vehicles and equipment during construction.

Impact of fugitive air emissions on Class I areas.

Adequacy of pollution prevention procedures.

#### **Indicators for Measuring Impacts**

Compliance with Clean Air Act and Nevada Air Pollution Control Act.

Compliance with acid rain provisions of Clean Air Act amendments.

Compliance with National Ambient Air Quality Standards.

Ability to obtain Prevention of Significant Deterioration permit.

Compliance with PSD visibility requirements.

Compliance with PSD increments of emissions associated with fuel combustion.

Ability to acquire the necessary sulfur dioxide allowances.

Compliance with New Source Performance Standards.

Compliance with National Emission Standards for Hazardous Air Pollutants.

Ability to obtain Permits to Operate for:

- construction activities;
- gasifier;
- flare;
- combustion turbine;
- sulfation combustor;
- coal handling system; and
- LASH handling system.

Impact on the status of attainment and non-attainment areas.

#### **GEOLOGY and SOILS**

#### **Issues**

Extent of earthquake hazard (e.g., fault line proximity; foundation support) and the degree to which the engineering design would prevent or minimize impact.

Impact on soil quality.

Effect of construction and operation on soil erosion.

Suitability of soil for supporting new facilities and waste storage, if needed.

#### **Indicators for Measuring Impacts**

Potential for seismic activity.

Degree of degradation of soil quality.

Impact on prime and unique farmland, if any.

Ability of seismic design to adequately sustain an earthquake.

#### WATER RESOURCES

#### Issues

Impact on the quantity and quality of water supply during normal conditions and drought conditions.

Impact on surface water and floodplains, such as impediments to natural drainage pattern and alterations to stream drainage flow; amount of sediment influx.

Impact of water treatment (such as direct discharges into stream).

Effect on downstream users.

Potential for flooding, and consequences of a flood.

Impact of stormwater drainage (such as increased/decreased water flow or runoff; discharge into wastewater facility).

Impact on water flow (such as altering characteristics; reducing water supply; impacting downstream supply; affecting aquatic recreational activities).

Impact from airborne contaminants.

Impact on groundwater (such as rate of groundwater recharge; rate of groundwater withdrawal; alterations to groundwater discharge; water table fluctuation; increased surface infiltration; conditions affected during prolonged drought; affect on regional water supply; development over aquifer recharge zone; considerations of recharge zone as a rapid recharge area; surface water flow into aquifer recharge zone; potential contamination by toxic materials; depth and gradient of underground water table; potential for spills, runoff, leachates to contaminate).

Adequacy of pollution prevention procedures.

#### **Indicators for Measuring Impacts**

Compliance with Executive Order 11988 on floodplains.

Compliance with Fish and Wildlife Coordination Act.

Compliance with Clean Water Act.

Compliance with Safe Drinking Water Act Maximum Contaminant Levels.

Compliance with Resource Conservation and Recovery Act.

Compliance with Nevada Water Pollution Control Law.

Compliance with Nevada Water Pollution Control Regulations.

Compliance with Nevada Drinking Water Regulations.

Compliance with Nevada Water Quality Standards.

Compliance with the Orr Ditch Decree.

Compliance with the Truckee River Negotiated Settlement.

Ability to comply, if needed, with National Pollutant Discharge Elimination System (NPDES) permit.

Ability to comply, if needed, with effluent guidelines and standards for steam electric power generating point sources (40 CFR Part 423).

Ramifications of the increased consumption of water.

Adequacy of water rights.

Adequacy of construction and operational procedures and facility/process characteristics to prevent the migration of potential contaminants to groundwater.

Ability to obtain permit for construction of evaporation pond under the Nevada State Discharge Permit System.

Ability to obtain permit from Nevada State Health Division and the Nevada Division of Environmental Protection for construction and operation of a new sanitary sewage treatment facility.

Ability to obtain a Special Use Permit from Storey County.

Ability to obtain a permit, if necessary, to construct and develop in a wetland.

#### LAND USE

#### **Issues**

Impacts on existing land use (such as mineral resources; commercial activities; future development; agriculture; sanitary landfills).

Impacts on land use trends and controls (such as introduction of land use changes; future land options; access to environmental resources — historical resources, etc; compatible with other area land uses; zoning).

Impacts on transportation and infrastructure (such as accommodation of road traffic; adequate bridges and roads; adequate parking and loading/unloading facilities; disruption of civilian road network; traffic volume; changes to rail, air, water transportation; use in environmentally sensitive areas).

#### **Indicators for Measuring Impacts**

Compliance with county zoning requirements.

Compatibility of proposed facility with existing and zoned land uses.

Zoning changes required to construct or operate the facility.

Local traffic and transportation impacts during construction and operation of the proposed facility.

#### BIOLOGICAL RESOURCES

#### **Issues**

Impact on aquatic ecosystems (such as the results of the physical evaluations, including flow, suspended solids and sedimentation, pools, riffles, and substrate composition, channel characteristics, temperature, and riparian evaluations; results of chemical evaluations, including water quality, hardness, alkalinity, pH, and salinity; and results of biological evaluations, including habitat suitability, diversity, and species analysis).

Impact on terrestrial ecosystems (such as nutrient cycling; habitat impact; wildlife type/amount; loss of breeding or nesting areas; vegetation loss; erosion and sedimentation; eutrophication; acidification; contaminant toxicity; noise and visual disturbance).

Impacts on threatened and endangered species (such as habitat loss; species loss/displacement).

Impacts of noise on wildlife.

Impacts on wetlands (such as dredge or fill material discharge; hydrology changes).

Impacts to biodiversity.

#### **Indicators for Measuring Impacts**

Compliance with Endangered Species Act of 1973.

Compliance with Migratory Bird Treaty Act.

Compliance with Executive Order 11990 on wetlands.

Compliance with Fish and Wildlife Coordination Act.

Compliance with Section 404 of Clean Water Act.

Would not result in the destruction or adverse modification of constituent elements essential to the conservation of listed species within the defined critical habitat.

Acceptance by the U.S. Fish and Wildlife Service that proposed project will not significantly impact, in any way, listed plant or animal species.

Degree of change, if any, to ecosystem diversity (biodiversity).

#### CULTURAL RESOURCES

#### **Issues**

Impacts on historical resources (such as physical destruction, damage, or alteration; alteration of property's setting; introduction of visual, audible, or atmospheric elements; neglect of property; transfer, lease, or sale of property).

Impacts on archaeological resources.

Impacts to Indians and/or Indian Reservations.

#### **Indicators for Measuring Impacts**

Compliance with Archaeological and Historic Preservation Act of 1974.

Compliance with Archaeological Resources Protection Act of 1974.

Compliance with National Historic Preservation Act of 1966.

Compliance with Antiquities Act.

Compliance with American Indian Religious Freedom Act of 1978.

Compliance with Native American Graves Protection and Repatriation Act of 1990.

Compliance with DOE Order 1230.2.

Proposed project would not result in the destruction of historic or cultural sites.

#### SOCIOECONOMIC RESOURCES

#### **Issues**

Impacts on demographics (such as population, employment, housing).

Potential for direct and indirect employment opportunities.

Impacts to minorities, low-income communities, and Indian Tribes.

Impact on local and regional economic activity (such as employment, land and property values, income, local energy rates, regional/local economic activity).

Impacts on public services (such as educational services, recreation/cultural facilities, social services, police protection, fire protection).

Impact on tourism.

#### **Indicators for Measuring Impacts**

Affect of possible additional workers on community housing availability, schools, emergency and medical services.

Expected tax revenues to local government.

Expected rate changes.

Proximity to and extent of impact on minorities, low-income communities, and Indian Tribes.

#### **HEALTH AND SAFETY**

#### **Issues**

Adequacy of pollution prevention procedures.

Impacts to worker health and safety.

Impacts to public health and safety.

#### **Indicators for Measuring Impacts**

Adequacy of corporate plans:

- Spill Prevention, Control and Countermeasures Plan;
- Hazardous Waste Contingency Plan;
- Facility Emergency Evacuation and Fire Fighting Plan; and
- Chemical Emergency Response Plan.

Compliance with Emergency Planning and Communication Right-to-Know Act.

Adequacy of safeguards to ensure environmental safety.

Compliance with Occupational Safety and Health Act of 1970.

Compliance with Nevada Division of Occupational Safety and Health standards.

Compliance with National Institute of Occupational Safety and Health guidelines.

#### HAZARDOUS AND TOXIC MATERIALS/WASTE MANAGEMENT

#### **Issues**

Effects from the composition and quantity of solid waste and hazardous and toxic materials generated (such as toxicology, teratagenicity/reproductive effects, carcinogenicity and mutagenicity, epidemiological studies, clinical studies).

Impact from disposal procedures.

Impact from transportation.

Adequacy of safety and handling procedures (e.g., adequate reduction in injury risk, operational hazards, accidental release, disease potential).

#### **Indicators for Measuring Impacts**

Compliance with Resource Conservation and Recovery Act regulations.

Compliance with Toxic Substances Control Act regulations.

Compliance with hazardous materials transportation regulations.

Compliance with Storey County management of solid and hazardous waste.

Compliance with Nevada state regulatory requirements for storage, handling and transportation of hazardous waste.

Ability to obtain a hazardous waste generator identification number from the Nevada Department of Environmental Protection.

Compliance with Nevada Revised Statute Title 40, Chapter 444, Section 444, 440.

Compliance with Comprehensive Environmental Response, Compensation, and Liability Act regulations.

Adequacy of pollution prevention measures.

#### **NOISE**

#### **Issues**

Impact of noise (such as construction/operation noise; impacts on wildlife and nearby humans; noise duration; adequacy of preventive measures; vibration).

#### **Indicators for Measuring Impacts**

Compliance with Noise Control Act of 1972.

Compliance with Noise Pollution and Abatement Act of 1970.

Compliance with Storey County noise ordinance.

#### **CUMULATIVE IMPACTS**

#### Issues

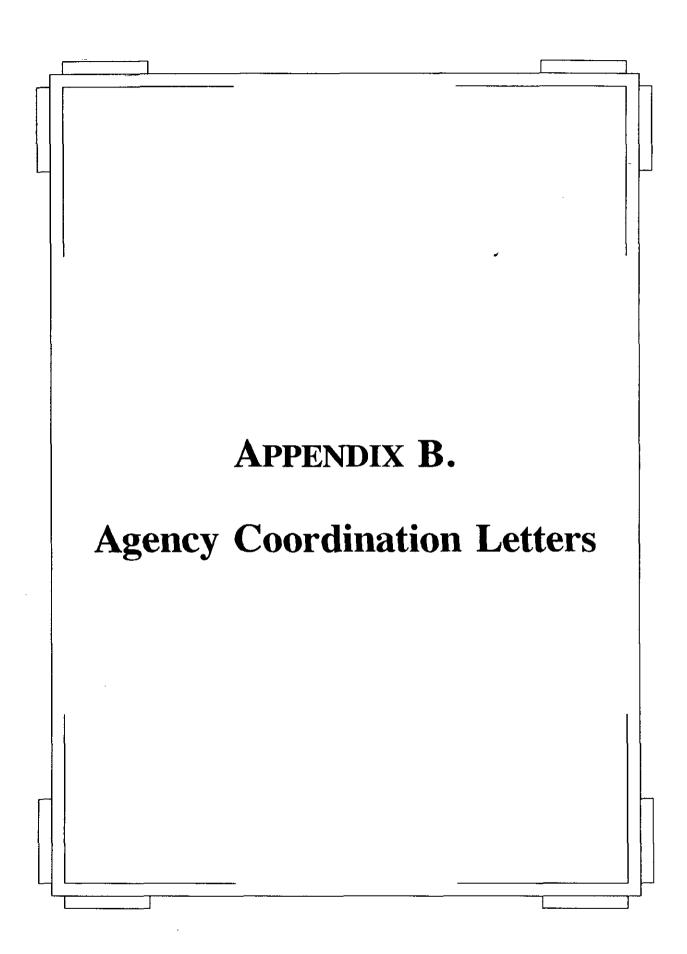
Impacts from past events, or activities and from other reasonably foreseeable facilities, operations, or activities, and the alternative's contribution to these impacts.

Impact on environmental quality.

#### **Indicators for Measuring Impacts**

Degree of impact to society as a whole, the region, effected interests, and the locality (context).

Severity of impact as measured by degree to which alternative affects public health or safety, the uncertainty of associated risks, any controversy associated with the impacts, and the degree to which alternative affects ecological resources (intensity).





RONALD M. JAMES
STATE HISTORIC PRESERVATION OFFICER

# DEPARTMENT OF MUSEUMS, LIBRARY, AND ARTS STATE HISTORIC PRESERVATION OFFICE

Capitol Complex
Carson City, Nevada 89710

February 7, 1994

Dr. Suellen Van Ooteghem
Environment, Safety, and Health Program Support Division
Department of Energy
Morgantown Energy Technology Center
P.O. Box 880
Collins Ferry Road
Morgantown, West Virginia 26507-0880

SUBJECT: Piñon Pine Power Project, Tracy, Storey Co., Nevada.

Dear Dr. Van Ooteghem:

The Nevada State Historic Preservation Office (SHPO) reviewed the material supplied by the Department of Energy (DOE) regarding the subject project. The SHPO concurs with the DOE's determination that the following sites are not eligible for nomination to the National Register of Historic Places under any of the Secretary's criteria:

26St82; 26St192; 26St193.

The SHPO would concur with a DOE determination that the following site is eligible for nomination to the National Register under criterion d.:

26St191.

National Register eligibility for the following sites are deferred pending further evaluation:

26St194; 26St195; 26St196; 26St197.

These sites will be treated as eligible properties until a determination of eligibility is made.

All sites with deferred evaluation and the historic property (26St191) will be temporarily protected during construction by 6 ft. tall chain link fencing. Because 26St191 will be within the operating area of the power plant, it will be permanently fenced by a 6 ft. tall chain link fence. This avoidance and permanent protection measure will adequately protect historic properties during construction and plant operation.

Suellen Van Ooteghem February 7, 1994 Page Two

The Nevada SHPO concurs with the DOE's determination of No Adverse Effect for the proposed undertaking. You can now forward the project material to the Advisory Council on Historic Preservation for their review.

Please contact Dr. Eugene Hattori at (702) 687-6362 if you have any questions concerning this correspondence.

Sincerely,

Alice M. Baldrica, Deputy

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State Historic Preservation Officer

## Advisory Council On Historic Preservation

The Old Post Office Building 1100 Pennsylvania Avenue, NW, #809 Washington, DC 20004 Reply to:

730 Simms Street, #401 Golden, Colorado 80401

May 6, 1994

Suellen A. Van Ooteghem, Ph.D.
Environmental Project Manager
Environment, Safety and Health
Program Support Division
Department of Energy
Morgantown Energy Technology Center
P.O. Box 880
Collins Ferry Road
Morgantwon, WV 26507-0880

REF: No Adverse Effect determination for the Pinon Pine Power Project, Tracy, Storey County, Nevada

Dear Ms. Van Ooteghem:

We have reviewed the documentation regarding your no adverse effect determination for the above referenced undertaking. Under procedures set forth in 36 CFR Section 800.5(d)(2), the Council does not object to the finding of no adverse effect. This letter evidences that the requirements of Section 106 of the National Historic Preservation Act and the Council's regulations have been met for this project. It should be retained with all supporting documentation in your agency's environmental or project file.

If you have any questions or require the further assistance of the Council, please contact the Western Office at (303) 231-5320.

Sincerely,

Claudia Nissley

Director, Western Office

of Review



## United States Department of the Interior

FISH AND WILDLIFE SERVICE
NEVADA ECOLOGICAL SERVICES STATE OFFICE
4600 Kietzke Lane, Building C-125
Reno, Nevada 89502-5093

March 18, 1994 File No. 1-5-94-044

Suellen A. Van Ooteghem, Ph.D. Environmental Project Manager Department of Energy Morgantown Energy Technology Center Collins Ferry Rd. Morgantown, WV 26507-0880

Dear Dr. Van Ooteghem

By letter of February 22, 1994, the Department of Energy (Department) requested the Fish and Wildlife Service's (Service) concurrence with their Biological Assessment (BA) that the Pinon Pine Power Project would not affect threatened and endangered species. Three species listed under the Endangered Species Act of 1973, as amended (Act), occur in the general vicinity of the proposed facility or immediately downstream: the endangered cui-ui (Chasmistes cuius); the endangered bald eagle (Haliaeetus leucocephalus); and the threatened Lahontan cutthroat trout (Oncorhynchus clarki henshawi) (LCT). Your request was submitted pursuant to section 7 of the Act.

#### Description of the Project

Sierra Pacific Power Company (Sierra), in conjunction with the Department, proposes to construct and operate a 95-megawatt coal gasification, electric generating plant at the existing Tracy Generating Station, along the Truckee River at Tracy, Nevada. This facility, known as the Pinon Pine Power Project, would convert approximately 800 tons of bituminous coal per day into gas for use in a combustion turbine generator for generating electricity. Supporting facilities would include coal received via existing rail lines, coal storage and handling facilities, lash handling and disposal, cooling water, air for instrumentation, control room, and other infrastructure improvements.

The facility would use ground water and Truckee River water for cooling. A maximum of 1,005 acre-feet (average rate of 1.4 cfs) of water would be used annually; 800-900 acre-feet of surface water from the Truckee River and 100-200 acre-feet of ground water from existing wells at the project site. Truckee River water would be pumped from an existing (since 1963) river pump station near the Tracy Generating Station. Only

the volume of water pumped at this station would be changed. No water would be returned to the river, but discharged to existing evaporation ponds.

All surface water rights that would be used at the facility were adjudicated in the Orr Ditch Decree. These rights, which range in priority dates from 1865 to 1897, were initially adjudicated for irrigation use. In accordance with the Orr Ditch Decree and Nevada law, Sierra changed the point of diversion and manner of use of these rights during the 1960's and 70's to industrial purposes at the Tracy Generating Station. Ground water rights were obtained in accordance with Nevada law in 1961 and 1974. No additional approvals of any court or administrative agency would be required to use these water rights at the facility.

The Department concluded in their BA that the project would not affect bald eagles, cui-ui, or LCT. Their premise was that the environmental baseline (as defined by 50 CFR § 402.02) of each species would not be altered because the project would use existing diversion facilities to exercise existing water rights.

#### Service's Determination

The foundation for the Service's review of potential effects to listed species is the Department's BA of February 1994 and conversations with Murray, Burns, and Kienlen (Department consultants who wrote the BA) on July 12, 1993, December 12, 1993, February 10, 1994, and March 16, 1994.

We concur with your "no effect" determination for the bald eagle, cui-ui, and LCT because the Service has already incorporated in each species' environmental baseline adverse effects from exercising Orr Ditch Decree water rights through existing diversion structures. Exercising these water rights was included in the baselines because they had been adjudicated through the U.S. District Court for the District of Nevada in September 8, 1944, upheld by the U.S. Supreme Court in 1983, and may be exercised at the discretion of the owners through existing diversion structures.

As a consequence, formal section 7 consultation under the authority of the Act is not required. This response constitutes informal consultation under regulations promulgated in 50 CFR § 402, which establish procedures governing interagency consultation under section 7 of the Act. Your agency should reinitiate consultation for this project under section 7 of the Act if:

Suellen A. Van Ooteghem, Ph.D.

- 1. The project is changed such that the effect of the action may affect listed species in a manner or to an extent not previously considered;
- 2. new biological information becomes available concerning listed species which may be affected by the project; or
- 3. a new species is listed or critical habitat designated that may be affected by the project.

We appreciate the opportunity to assist the Department in this evaluation. Should you require further assistance, please contact Chester C. Buchanan or me at (702) 784-5227.

Sincerely,

David L. Harlow State Supervisor

cc:

Assistant Regional Director, Ecological Services, Portland, Oregon (AES)



### United States Department of the Interior

FISH AND WILDLIFE SERVICE
NEVADA ECOLOGICAL SERVICES STATE OFFICE
4600 Kietzke Lane, Building C-125
Reno, Nevada 89502-5093

January 4, 1994 File No. 1-5-94-SP-044

Dr. Suellen A. Van Ooteghem
Department of Energy
Morgantown Energy Technology Center
Post Office Box 880
Morgantown, West Virginia 26507-0880

Dear Dr. Van Ooteghem:

Subject: Species List for the Proposed Pinon Pine Power Project, Near Reno, Nevada

As requested by your letter dated November 23, 1993, enclosed is an updated list of threatened and endangered species that may be present in the project area (Enclosure A). Please reference File Number 1-5-94-SP-044 in all subsequent correspondence. This fulfills the requirement of the Fish and Wildlife Service (Service) to provide information on listed species pursuant to section 7(c) of the Endangered Species Act of 1973, as amended.

Also, for your consideration, we have included a list of candidate species that may be present in the project area (Enclosure A). These species are currently being reviewed by the Service and are under consideration for possible listing as endangered or threatened. Should surveys reveal that candidate species may be adversely affected, you may wish to contact our office for technical assistance. One of the potential benefits from such technical assistance is that, by exploring alternatives early in the planning process, it may be possible to avoid conflicts that could otherwise develop, should a candidate species become listed before the project is completed.

Please contact Michael Burroughs at (702) 784-5227 if you have any questions.

Sincerely,

David L. Harlow State Supervisor

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Enclosure

#### ENCLOSURE A

#### THREATENED, ENDANGERED, AND CANDIDATE SPECIES THAT MAY OCCUR IN THE AREA OF THE PROPOSED

#### Pinon Pine Power Plant

Near Reno, Nevada

File Number: 1-5-94-37-044

#### Listed Species

Bird

E bald eagle

Halimeetus leucocephalus

**Fishes** 

2 cui-ui

T Lahontan cutthroat trout

Chasmistes cujus

Oncorhynchus clarki henshawi

#### Candidate Species

Manuals

2 spotted bat

2 pygmy rabbit

Euderma maculatum

Brachylagus idahoensis -

Birds

2 black tern

2 western least bittern

2 loggerhead shrike

2 white-faced ibis

Chlidonias niger Ixobrychus exilis hesperis

Lanius ludovicianus

Plegadis chihi

Reptile

2 northwestern pond turtle

Clammys marmorata marmorata

Invertebrate

2 California floater

Anodonta californiensis '

E = Endangered

T = Threatened

<sup>(2) --</sup> Category 2: Taxa for which existing information indicates may warrant listing, but for which substantial biological information to support a proposed rule is lacking.

# RECEIVED MAR 2 1 1994

ENVIRONMENTAL AFFAIRS DEPT.

#### Storey County Building Department P.O. Box 526 Virginia City, Nevada 89440

March 21, 1994

Frank Luchetti, Supervisor Environmental Affairs Sierra Pacific Power Company P.O. Box 10100 Reno, Nevada 89520

Re: Pinon Pine Environmental Impact Study

Dear Frank:

This letter is in response to Sierra Pacific Power Company's concerns regarding Storey County's Noise Ordinance Control requirements (Storey County Code 8.04.010 through 8.04.030). The following mitigation proposal will be considered as part of the special use permit requirements.

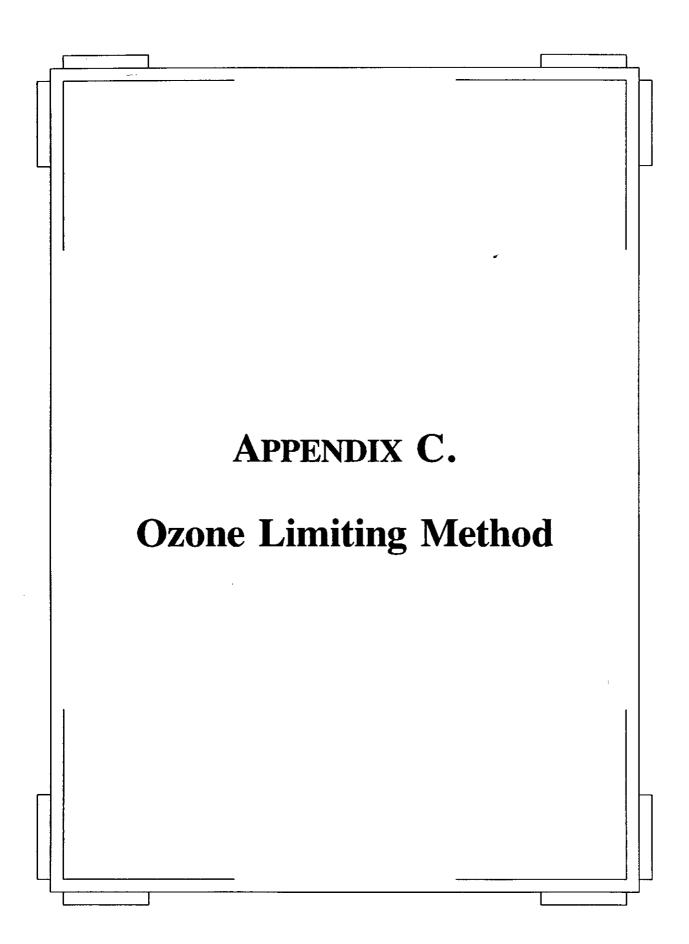
If a high instantaneous level of noise pollution occurs during the "steam blow" activity during the construction olean up phase of the Pinon Pine Plant, Storey County would agree to Sierra Pacific Power Company's mitigation proposal to relocate all and any residents within the valley that would be impacted during these noise "steam blow" construction activities. Sierra Pacific Power would be responsible for all costs incurred for this relocation.

Sierra Pacific Fower Company at this time does not have a special use permit for the Pinon Pine Project. During the public hearings this concern and mitigation proposal will be brought to the community's attention. Stipulations will be specifically addressed for the noise mitigation requirements if Sierra Pacific receives a special use permit for the Pinon Pine project and will be part of said special use permit's requirements.

Sincerely,

Dean Haymore

Storey County Building Official



#### APPENDIX C: OZONE LIMITING METHOD

The ozone limiting method [an approved procedure described in the <u>Guideline in Air Quality Models (Revised)</u>] was used to estimate the maximum amount of the oxides of nitrogen  $(NO_x)$  emissions  $(NO + NO_2)$  that could be converted to nitrogen dioxide  $(NO_2)$ . The method is based on the simple chemical reaction in the atmosphere.

$$NO + O_3 \rightarrow NO_2 + O_2$$

That is, it is conservatively assumed that ozone present in the ambient air mixes completely with the plume and that this reaction with NO supersedes all competing reactions. The total modeled ambient  $NO_2$  concentration is comprised of the initial fraction of  $NO_x$  emitted as  $NO_2$  (assumed to be 10 percent) plus the fraction of  $NO_x$  emitted as  $NO_2$  and subsequently converted to  $NO_2$  in the atmosphere. In equation form,

$$[NO_2] = [NO_x] \times 0.1 + [O_3] \text{ if } [O_3] < 0.9 [NO_x]$$
  
=  $[NO_x] \text{ if } [O_3] \ge 0.9 [NO_x]$ 

Application of the ozone limiting method, therefore, involves an initial comparison of the predicted  $NO_x$  concentration and the ambient ozone concentration to determine which is the limiting factor in  $NO_2$  formation. If the ozone concentration is greater than the estimated  $NO_x$  concentration, total conversion of  $NO_x$  to  $NO_2$  is assumed. If the estimated  $NO_x$  concentration is greater than the ozone concentration, the formation of  $NO_2$  from  $NO_x$  is limited by the ambient ozone concentration.

The following procedure was used to determine the amount of modeled NO<sub>x</sub> that could be converted to NO<sub>2</sub>:

- 1) Calculate the hourly ground-level NO<sub>x</sub> concentration.
- Divide the predicted hourly NO<sub>x</sub> concentration into two components. One component represents the thermal conversion and is equal to 10 percent of the NO<sub>x</sub> concentration. The remaining 90 percent is subject to conversion to NO<sub>2</sub> by ozone.

- 3) If the hourly representative monitored background ozone concentration is greater than 90 percent of the modeled hourly NO<sub>x</sub> concentration, then total conversion of NO<sub>x</sub> to NO<sub>2</sub> is assumed.
- 4) If 90 percent of the predicted hourly NO<sub>x</sub> concentration is greater than the hourly ozone concentration, then the formation of NO<sub>2</sub> is limited by the ambient ozone level. For this case, the NO<sub>2</sub> concentration is equal to the ambient ozone concentration plus the 10 percent component of the predicted hourly NO<sub>x</sub> concentration.

Because of the chemical reaction which occurs in the atmosphere, the quantity of  $NO_x$  converted to  $NO_2$  from a new source is dependent on the concentration of ambient ozone which is, in turn, dependent on the quantity of ambient ozone expended reacting with  $NO_x$  emissions from existing sources. Therefore, to accurately assess the concentration of  $NO_2$  at any given receptor resulting from a new source, the modeling analysis must consider the difference between the future  $NO_2$  concentration (new source plus existing sources) and the present  $NO_2$  concentration (existing sources only). In other words, if the present (existing sources)  $NO_2$  concentration at a given receptor is 3  $\mu$ g/m³ and the  $NO_2$  concentration at that same receptor is 5  $\mu$ g/m³ for the new source plus existing sources, the incremental impact from the new source is 2  $\mu$ g/m³.

The incremental NO<sub>2</sub> impact of the proposed Piñon Pine Power Project was determined as the difference between the projected ozone-limited impact for the future plant (existing Tracy Power Station units, two 83.5 MW combustion turbines, and the proposed Piñon Pine Power Project) and the ozone-limited impact for the existing plant (current Tracy Power Station units and two 83.5 MW combustion turbines). Because the NO<sub>2</sub> impact of the proposed Piñon Pine Power Project is maximized when the NO<sub>2</sub> impacts from the existing units are minimized (i.e., more ozone is available to convert Piñon Pine Power Project NO<sub>x</sub> emissions to NO<sub>2</sub>), actual 1992 emissions were used for Tracy units 1 through 3 rather than permitted emissions. Permitted emissions were used for the two 83.5 MW combustion turbines since actual emission data are not available. This approach provides a conservative estimate of the actual NO<sub>2</sub> impacts from the proposed Piñon Pine Power Project.

The ozone limiting method was applied using hourly data from the Washoe County-operated Sparks monitor located about 20 km (12.5 miles) to the west of the Tracy Power Station. Data from this monitor are representative of the regional ambient ozone concentration available to convert NO to NO<sub>2</sub>.

On days when missing data were reported, the highest hourly ozone concentration observed on that day was used as a substitution value. For missing periods encompassing several days, the highest valid ozone concentration observed during the first or last day of the missing period was used as a substitution value.

Table D-2. Visual effects screening analysis for Source: EXISTING SOURCES. Class I Area: DESOLATION WILDERNESS.

*** Level-1 Sc	reening ***
put Emissions for:	1
Particulates	187.10 lb/hr
$NO_x$ (as $NO_2$ )	2,039.60 lb/hr
Primary NO <sub>2</sub>	0.00 lb/hr
Soot	0.00 lb/hr
Primary SO <sub>4</sub>	- 0.00 lb/hr
ransport Scenario Specifications:	0.04 ppm
ransport Scenario Specifications: Background Ozone	0.04 ppm 60.00 km
ransport Scenario Specifications: Background Ozone Background Visual Range	,
ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance	60.00 km
ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance Minimum Source—Class I Distance	60.00 km 81.30 km
ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance Minimum Source—Class I Distance Maximum Source—Class I Distance	60.00 km 81.30 km 81.30 km
*** Default Particle Characteristics Assumed  ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance Minimum Source—Class I Distance Maximum Source—Class I Distance Plume-Source-Observer Angle Stability	60.00 km 81.30 km 81.30 km 97.20 km

RESULTS
[Asterisks (\*) indicate plume impacts that exceed screening criteria]

Maximum Visual Impacts INSIDE Class I Area - Screening Criteria ARE Exceeded

14	taximum v	isuai impu	is mouse of	433 1 2 11 04	ocicening	Cittoria rik	E LACCOUC	•	
Deelsonound	Theta	Azi	Distance	Alpha	Del	ta E	Contrast		
Background	Incla	AZI	Distance	Alpua	Criteria	Plume	Criteria	Plume	
Sky	10.	84.	81.3	84.	2.00	5.190*	0.05	-0.009	
Sky	140.	84.	81.3	84.	2.00	1.995	0.05	-0.016	
Terrain	10.	84.	81.3	84.	2.00	1.030	0.05	+0.016	
Terrain	140.	84.	81.3	84.	2.00	0.324	0.05	+0.012	

#### Maximum Visual Impacts OUTSIDE Class I Area - Screening Criteria ARE Exceeded

Daalcaround	Theta	Azi	Distance	Alpha	Del	ta E	Contrast	
Background	Incia	AZI	Distance	Атрпа	Criteria	Plume	Criteria	Plume
Sky 10.	10.	65.	75.9	104.	2.00	5.426*	0.05	-0.010
Sky	140.	65.	75.9	104.	2.00	2.071*	0.05	-0.043
Terrain	10.	20.	53.6	149.	2.00	1.396	0.05	0.018
Terrain	140.	20.	53.6	149.	2.00	0.419	0.05	0.017

Table D-3. Visual effects screening analysis for Source: PROPOSED SOURCES. Class I Area: DESOLATION WILDERNESS.

*** Level-1 S	1
Particulates	21.50 lb /hr
NO <sub>x</sub> (as NO <sub>2</sub> )	212.00 lb /hr
Primary NO <sub>2</sub>	20.00 lb /hr
Soot	✓ 0.00 lb /hr
Primary SO <sub>4</sub>	0.00 lb /hr
ransport Scenario Specifications:	0.04 ppm
	0.04 ppm 60.00 km
ransport Scenario Specifications: Background Ozone	1
Transport Scenario Specifications: Background Ozone Background Visual Range	60.00 km
Transport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance	60.00 km 81.30 km
Background Visual Range Source-Observer Distance Minimum Source-Class I Distance	60.00 km 81.30 km 81.30 km
Cransport Scenario Specifications:  Background Ozone  Background Visual Range Source-Observer Distance Minimum Source—Class I Distance Maximum Source—Class I Distance	60.00 km 81.30 km 81.30 km 97.20 km

RESULTS

[Asterisks (\*) indicate plume impacts that exceed screening criteria]

#### Maximum Visual Impacts OUTSIDE Class I Area - Screening Criteria ARE NOT Exceeded

Background	Theta	— Azi	Distance	Alpha	Del	ta E	Contrast		
Dackground	Thota	A2i	Distance	лірпа	Criteria	Plume	Criteria	Plume	
Sky	10.	84.	81.3	84.	2.00	0.663	0.05	-0.009	
Sky	140.	84.	81.3	84.	2.00	0.261	0.05	-0.005	
Terrain	10.	84.	81.3	84.	2.00	0.121	0.05	0.002	
Terrain	140.	84.	81.3	84.	2.00	0.039	0.05	0.001	

#### Maximum Visual Impacts OUTSIDE Class I Area - Screening Criteria ARE Exceeded

Background	Theta	Azi	Distance	Alpha	Del	ta E	Contrast		
Dackground	Incla	AZI	Distance Alpha		Criteria	Plume	Criteria	Plume	
Sky	10. 55. 72.8		72.8	114.	2.00	0.718	0.05	-0.001	
Sky	140.	55.	72.8	114.	2.00	0.279	0.05	-0.005	
Terrain	10.	15.	47.6	154.	2.00	0.167	0.05	0.002	
Terrain	140.	15.	47.6	154.	2.00	0.050	0.05	0.002	

Table D-4. Visual effects screening analysis for Source: TOTAL FACILITY.

Class I Area: DESOLATION WILDERNESS.

*** Level-1 Sc.	reening ***
put Emissions for:	
Particulates	208.60 lb /hr
$NO_x$ (as $NO_2$ )	2,251.60 lb /hr
Primary NO <sub>2</sub>	0.00 lb /hr
Soot	0.00 lb /hr
Primary SO <sub>4</sub>	0.00 lb /hr
ransport Scenario Specifications:	0.04 app
ransport Scenario Specifications: Background Ozone	0.04 ppm
ransport Scenario Specifications: Background Ozone Background Visual Range	60.00 km
ransport Scenario Specifications: Background Ozone Background Visual Range	· · · · · · · · · · · · · · · · · · ·
ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance	60.00 km
ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance Minimum Source—Class I Distance	60.00 km 81.30 km
ransport Scenario Specifications: Background Ozone Background Visual Range Source-Observer Distance Minimum Source—Class I Distance Maximum Source—Class I Distance	60.00 km 81.30 km 81.30 km
**** Default Particle Characteristics Assumed  Transport Scenario Specifications:  Background Ozone  Background Visual Range  Source-Observer Distance  Minimum Source—Class I Distance  Maximum Source—Class I Distance  Plume-Source-Observer Angle  Stability	60.00 km 81.30 km 81.30 km 97.20 km

RESULTS
[Asterisks (\*) indicate plume impacts that exceed screening criteria]

Maximum Visual Impacts INSIDE Class I Area - Screening Criteria ARE Exceeded

Pools around	Theta	Azi	Distance	Alpha	Del	ta E	Contrast		
Background	Incta	AZI	Distance	Aipila	Criteria	Plume	Criteria	Plume	
Sky	10.	84.	81.3	84.	2.00	5.605*	0.05	-0.010	
Sky	140.	84.	81.3	84.	2.00	2.146*	0.05	-0.044	
Terrain	10.	84.	81.3	84.	2.00	1.135	0.05	+0.017	
Terrain	140.	84.	81.3	84.	2.00	0.353	0.05	+0.013	

Maximum Visual Impacts OUTSIDE Class I Area - Screening Criteria ARE Exceeded

Background	Theta	Azi	Distance	Alpha	Del	ta E	Contrast		
Dackground	I neta I	AZI	Distance	Aipua	Criteria	Plume	Criteria	Plume	
Sky	10.	65.	75.9	104.	2.00	5.845*	0.05	-0.011	
Sky	140.	65.	75.9	104.	2.00	2.220*	0.05	-0.047	
Terrain	10.	20.	53.6	149.	2.00	1.537	0.05	0.020	
Terrain	140.	20.	53.6	149.	2.00	0.463	0.05	0.019	

This is because the meteorological data was collected in an east-west oriented valley and is subject to valley channeling effects. This is illustrated in the wind-rose for the Tracy Power Station presented in Figure D-1. Therefore, meteorological data from nearby Reno, NV, was used to avoid the valley channeling effects and was determined to better represent the overall study area (see Figure D-2).

The Level II visibility analysis requires that a worst-case wind direction and speed be determined. A chart for wind direction and a wind speed frequency distribution for that wind direction is included for both Tracy and Reno meteorological data in Tables D-5 to D-7. (Wind roses for each meteorological site are included in Figures D-1 and D-2.) Using the base elevation of the site, location of the Class I area, and the elevation of the terrain between the two areas, the worst-case wind direction was determined to be from the northeast (flow vectors 214 to 236 degrees).

A frequency chart showing worst-case dispersion conditions ranked in order of decreasing severity and the frequency of occurrence of these conditions associated with the wind direction that could transport emissions toward the Class I area was developed using actual 1989 Reno meteorological data (see Table D-6). Dispersion conditions were ranked by evaluating the product SigmaZ\*u, where SigmaZ is the Pasquill-Gifford vertical diffusion coefficient for the given stability class and downwind distance "x" along the stable plume trajectory, and "u" is the maximum wind speed for the given wind speed category in the joint frequency table (see Table D-7). The dispersion conditions were then ranked in ascending order of the value SigmaZ\*u and their frequencies of occurrence were added to determine a cumulative frequency. Dispersion conditions with wind speeds of less than 2 meters/second were not considered to cause an impact because of the long plume transport time (> 12 hrs) to the Class I area and, thus, were not considered in the analysis. When the frequencies of occurrence added up to a cumulative frequency of 1.0 percent, the dispersion condition and wind speed associated with the 1.0 percent cumulative frequency was used in the analysis. Dispersion condition D,5 (neutral stability with a 5 meters/second wind speed) from Table D-6 was associated with a cumulative frequency of 1.0 percent, so this was the dispersion condition used to evaluate worst-case visual impacts for the Level II screening analysis.

#### **Summary of Results**

Only the Total Facility case was evaluated as it was the most conservative case. The results provided in Table D-8 show that all visual impacts are below the screening criteria for all impact categories. Therefore, this analysis indicates that the plumes from the existing sources plus the proposed sources would not cause significant visual impacts in the Desolation Wilderness or other scenic areas that

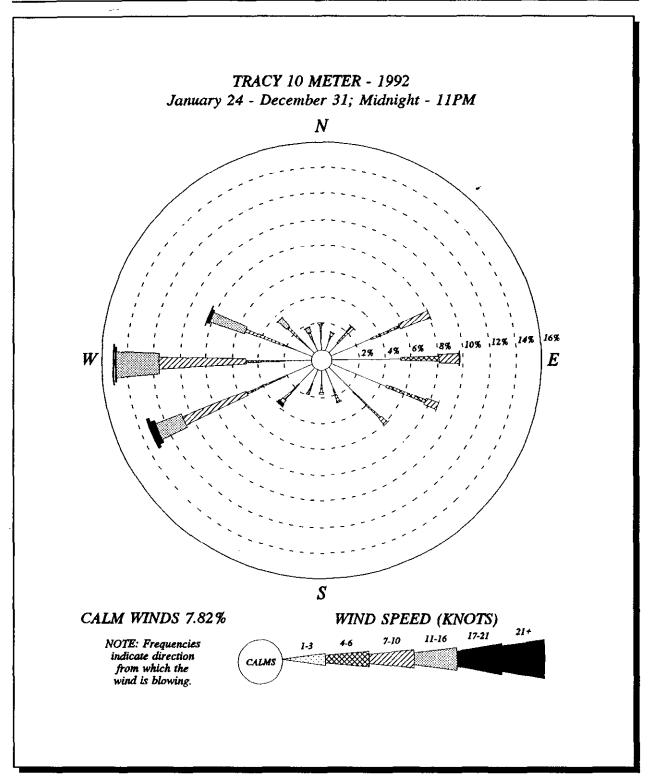


Figure D-1. Wind rose, Tracy 10-meter tower - 1992.

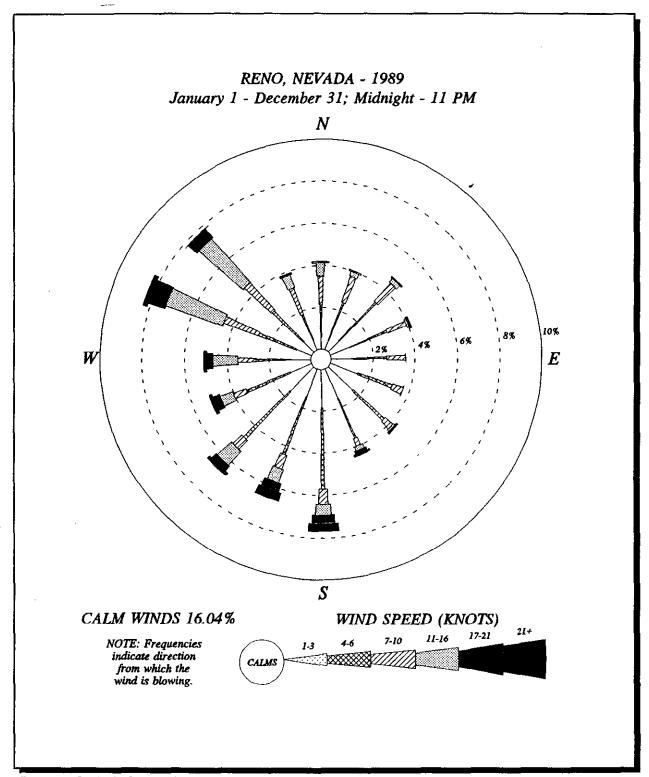


Figure D-2. Wind rose, Reno, NV - 1989.

Table D-5. Frequency distribution for 1992 Tracy 10-meter meteorological tower data for the flow vectors 214 to 236 degrees.

Wind Clas	sses for Time 01	00-0600 (	m/s)							
Stability	0-1 1-2	2-3	3-4	4-5	5-6	<b>6-</b> 7	7-8	8-9	9-10	10+
Α	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>B</b>	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
D	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000 0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
F	0.0053 0.0008	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Wind Clas	sses for Time 07	00-1200 (	m/s)							
Stability	0-1 1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
A	0.0045 0.0033	0.0010	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
B	0.0001 0.0000	0.0001	0.0011	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C	0.0000 0.0000	0.0000	0.0003	0.0005	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000
D	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Е	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
F	0.0014 0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Wind Clas	sses for Time 13	00-1800 (	m/s)							
Stability	0- 1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
A	0.0001 0.0008	0.0036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
В	0.0000 0.0000	0.0001	0.0021	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C	0.000.0 0000.0	0.0003	8000.0	0.0014	0.0003	0.0000	0.0000	0.0000	0.0000	00000.0
D	0.0000 0.0000	0.0000	0.0000	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0001
E	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
F	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Wind Clas	sses for Time 19	00-2400 (	m/s)							
Stability	0-1 1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
A	0.0000 0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
В	0.0000 0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
C	0.0000 0.0000	0.0000	0.0001	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
D	0.0001 0.0000	0.0000	0.0004	0.0001	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
E	0.0000 0.0000	0.0001	0.0004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
F	0.0010 0.0004	0.0005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total Valid	Hours: 7300.									

Table D-6. Tracy Generating Station Level II visibility screening to determine impacts on Desolation Wilderness, California Class I area.

Dispersion Condition	SigmaZ	Transport	Dispersion	n Condition	urrence of G Associated v on for Given	w/Worst	Cum	ency and ulative ency (%)
(Stability, Wind Speed)	*u (m2/s)	Time (Hours)	0-6	6-12	12-18	18-24	f	cf
F,1	89	45.2*	0.1	0	0.0	0.2	0.2	0.0
E,1	175	45.2*	0.0	0.0	0.0	0.0	0.0	0.0
F,2	178	15.0*	0.1	0.0	0.0	0.3	0.2	0.0
F,3	267	9.0	0.1	0.0	0.0	0.3	0.3	0.3
E,2	350	15.0*	0.1	0.0	0.0	0.2	0.2	0.3
F,4	356	6.5	0.0	0.0	0.0	0.0	0.0	0.3
D,1	418	45.2*	0.0	0.0	0.0	0.0	0.0	0.3
F,5	445	5.0	0.0	0.0	0.0	0.0	0.0	0.3
E,3	525	9.0	0.1	0.0	0.0	0.2	0.2	0.5
F,6	534	4.1	0.0	0.0	0.0	0.0	0.0	0.5
F,7	623	3.5	0.0	0.0	0.0	0.0	0.0	0.5
E,4	700	6.5	0.0	0.0	0.1	0.1	0.1	0.6
F,8	712	3.0	0.0	0.0	0.0	0.0	0.0	0.6
F,9	801	2.7	0.0	0.0	0.0	0.0	0.0	0.6
<b>D</b> ,2	837	15.0*	0.0	0.2	0.1	0.0	0.2	0.6
E,5	875	5.0	0.0	0.0	0.1	0.1	0.1	0.7
F,10	890	2.4	0.0	0.0	0.0	0.0	0.0	0.7
F,11	935	2.1	0.0	0.0	0.0	0.0	0.0	0.7
E,6	1050	4.1	0.0	0.0	0.0	0.1	0.1	0.8
E,7	1225	3.5	0.0	0.0	0.0	0.0	0.0	0.8
D,3	1255	9.0	0.1	0.1	0.1	0.1	0.1	0.9
E,8	1400	3.0	0.0	0.0	0.0	0.0	0.0	0.9
E,9	1575	2.7	0.0	0.0	0.0	0.0	0.0	0.9
D,4	1673	6.5	0.0	0.0	0.0	0.04	0.0	0.9
E,10	1750	2.4	0.0	0.0	0.0	0.0	0.0	0.9
E,11	1925	2.1	0.0	0.0	0.0	0.0	0.0	0.9
D,5	2092	5.0	0.0	0.0	0.1	0.1	0.1	1.0

Frequency of occurrence of worst case wind direction and worst case dispersion conditions 1989 Reno, Nevada, meteorological tower data flow vectors 214 to 236 Degrees.

<sup>\*</sup> Transport times of greater than 12 hours are not considered in analysis.

Table D-7. Frequency distribution for 1989 Reno meteorological tower data for the flow vectors 214 to 236 degrees.

Stability	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
A			0.0000	•	• -	0.0000		-			
B			0.0000								
3			0.0000						-		
) D			0.0005								
E			0.0009								
F			0.0007								
-			700-1200		0.0001	0.0000	0.0000	0.0000	0.0000	0.000	0.0000
Stability		1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
A			0.0002	•				• -			
3			0.0024								
3			0.0011								
)			0.0005								
R			0.0001								
- F			0.0000								
-			300-1800		0.0000	0.000	0.0000	0,000	0,000	0.000	0.0000
Stability		1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
<b>4</b>		0.0000	0.0002	0.0000	0.0000			0.0000	0.0000	0.0000	0.0000
3			0.0010								
2	0.0005	0.0015	0.0010	0.0009	0.0017	0.0007	0.0003	0.0000	0.0000	0.0000	0.0000
D	0.0000	0.0005	0.0009	0.0002	0.0006	0.0007	0.0010	0.0006	0.0002	0.0000	0.0000
E			0.0001								
7	0.0000	0.0000	0.0003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Wind Cla	asses for	Time 1	900-2400	) (m/s)							
Stability	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10+
A		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3			0.0000								
3	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
)			0.0010								
Е			0.0019								
F			0.0030								

Table D-8. Visual effects screening analysis for Source: TOTAL FACILITY.

Class I Area: DESOLATION WILDERNESS.

Level II VISIBILITY ANALYSIS ***  Input Emissions For:  Particulates  NO <sub>x</sub> (as NO <sub>2</sub> )	User selected screening scenarion	208.60 lb/hr 2,251.60 lb/hr
Primary NO <sub>2</sub> Soot		0.00 lb/hr 0.00 lb/hr 0.00 lb/hr
Primary SO <sub>4</sub> Particle Characteristics:	Density	Diameter
Primary Part	2.5	6
Soot	2.0	1
Sulfate	1.5	4
Transport Scenario Specifications:		
Background Ozone		0.04 ppm
Background Visual Range		60.00 km
Source-Observer Distance		81.30 km
Minimum Source—Class I Distance		81.30 km
Maximum Source—Class I Distance	e	97.20 km
Plume-Source-Observer Angle		11.25 degrees
Stability		4
Wind Speed		5.00 m/s

RESULTS
[Asterisks (\*) indicate plume impacts that exceed screening criteria]

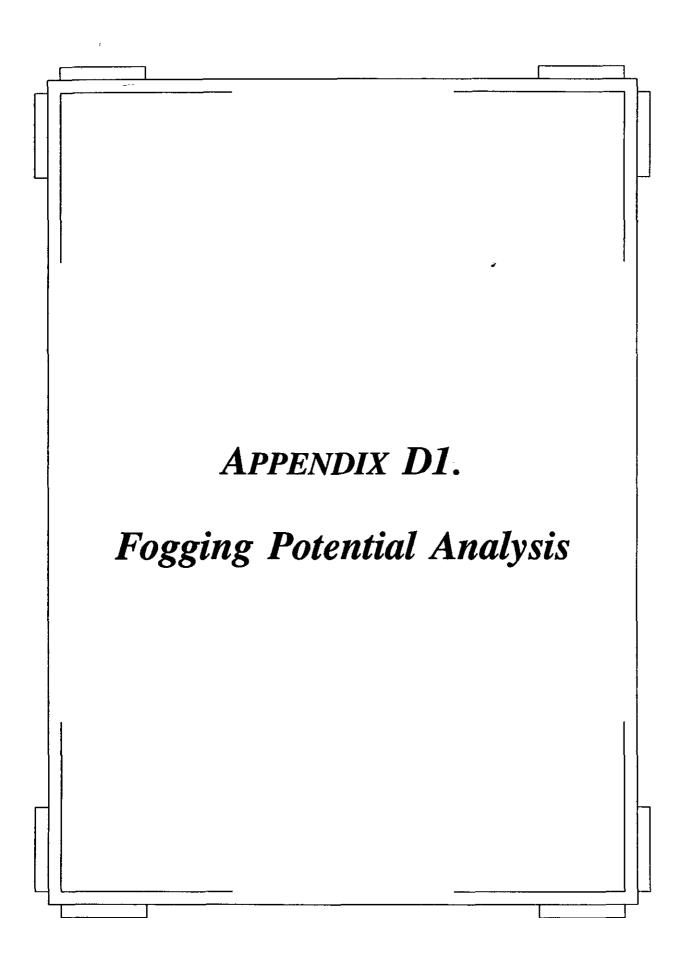
Maximum Visual Impacts INSIDE Class I Area - Screening Criteria ARE NOT Exceeded

Daakaraund	Theta	Azi	Distance	Alpha	Del	ta E	Con	trast
Background	THELE	AZI	Distance	Aipua	Criteria	Plume	Criteria	Plume
Sky	10.	84.	81.3	84.	2.37	0.572	0.05	-0.001
Sky	140.	84.	81.3	84.	2.00	0.226	0.05	-0.004
Terrain	10.	84.	81.3	84.	2.27	0.100	0.05	0.001
Terrain	140.	84.	81.3	84.	2.00	0.033	0.05	0.001

# Maximum Visual Impacts OUTSIDE Class I Area - Screening Criteria ARE NOT Exceeded

Background	Theta	Azi	Distance	Alpha	Del	ta E	Con	trast
Dackground	Theta	AZI	Distance	Aipna	Criteria	Plume	Criteria	Plume
Sky	10.	50.	71.	119.	2.00	0.561	0.05	-0.001
Sky	140.	50.	<b>7</b> 1.	119.	2.00	0.218	0.05	-0.004
Terrain	10.	0.	1.	169.	2.00	0.220	0.05	0.002
Terrain	140.	0.	1.	169.	2.00	0.070	0.05	0.002

are located further away. This conclusion assumes no major changes to the facility emissions output or location in the future and regulatory acceptance of the meteorological data used to perform the visual impact assessment.



# APPENDIX D1: FOGGING POTENTIAL FOR THE PROPOSED PIÑON PINE POWER PROJECT

# INTRODUCTION

This appendix presents an analysis of the potential impacts of the Piñon Pine Power Project on fog generation within the Truckee River Canyon. The primary goal of this appendix is to quantify what impact water vapor emissions associated with the proposed project may have on fog episodes along Interstate 80 in the vicinity of the proposed project site. This appendix is based on information prepared by ENSR Consulting and Engineering that was presented to SPPCo. in a July 1994 report.

# Project Background

SPPCo. proposed to DOE (under the CCT Round IV Solicitation) to design, build and operate an Integrated Coal Gasification Combined-Cycle (IGCC) facility at its Tracy Power Station near Reno, NV. Tracy Power Station is a 723-acre site located in Storey County, NV, approximately 27 km (17 miles) east of the Reno/Sparks area, in the Truckee River Canyon. The town of Fernley, NV (population 7,000) is located 27 km (17 miles) east of the Tracy Power Station. The Truckee River creates the northernmost boundary of the proposed project site, and is the dividing line between Storey and Washoe Counties. Interstate 80, the main east-west transportation corridor in northern Nevada, is just north of the Truckee River in this area.

# Scope

The analysis was performed using computer models developed and approved by the U.S. EPA and the Electric Power Research Institute (EPRI). The input data provided for these models was obtained from a number of sources. This appendix includes several sections including a description of the models, the origin of the data, the results of the computer modeling, an analysis of these results, and the conclusions drawn.

# TECHNICAL APPROACH

Models Selected for Analysis of Fogging Potential

Two analytical techniques that complement each other were selected for the analysis of the fogging potential of industrial processes in the vicinity of the Tracy Power Station. These models, SACTI and ISCST2, are both used in assessments of fogging potential and have been accepted by EPA for modeling assessments of similar facilities. A brief description of each model is given below.

EPRI has supported research efforts to develop and validate a mathematical model to predict seasonal and annual probabilities of fogging and icing caused by cooling tower plumes. The result of their efforts is the Seasonal and Annual Cooling Tower Impacts (SACTI) model (EPRI, 1984), developed and validated for EPRI by Argonne National Laboratory, Argonne, IL. SACTI is a statistical model designed specifically for assessing cooling tower impacts. The SACTI model represents an improvement over previous cooling tower models that applied very simplified methods. The technique employed in the SACTI model is based on the premise that distinct plume formations can be described for a discrete number of wind direction-tower orientations. The SACTI model determines the combinations of cooling tower operation and ambient meteorological conditions that describe distinct, visible plumes. These plume conditions are then physically evaluated through the use of an integral type plume model to simulate thermodynamic interaction of the plume with ambient air as well as physical plume dispersion. The model then determines potential frequencies of fogging and icing based on input of meteorological data for a specific location.

The SACTI model was chosen for this application primarily because it represents a validated cooling tower plume model designed for assessing cooling tower plume impacts. The model employs a state-of-the-art methodology for these assessments and has been applied in many regulatory applications (e.g., environmental impact assessments).

If water vapor can be thought of as just another airborne "pollutant", then it can be modeled using the Industrial Source Complex (ISCST2) model. Due to the inability of SACTI to model sources other than cooling towers, ISCST2 was employed to model all types of sources that could significantly contribute to the fogging potential: cooling towers, evaporation ponds and pond aerators, naturally occurring ponds, and the Truckee River itself. The output of the SACTI model in terms of exit emission parameters were used as input to ISCST2 for certain cooling tower sources. In addition, since

ISCST2's treatment of the thermodynamic interaction of vapor plumes with ambient air is not as sophisticated as SACTI's, the modeling analysis also incorporated a comparison of the predicted impacts between the two models for the cooling tower impacts, specifically. As is reported below, the SACTI results were found to be less conservative than those of ISCST2 because ISCST2 neglects certain entrainment and evaporation phenomena accounted for by SACTI. In addition, SACTI uses a water vapor emission rate which depends upon the ambient temperature and relative humidity. The ISCST2 runs for the cooling towers used a constant water vapor emission rate which was conservative. These comparisons were then used to assess the relative conservatism of the ISCST2 results, and to make conclusions involving the fogging potential of the proposed Piñon Pine Power Project as a whole.

SACTI Modeling Analysis of Fogging from Cooling Towers

# **Overview**

The SACTI model was applied to determine the potential for fogging or icing conditions on Interstate 80 caused by the existing Tracy Power Station cooling towers and the proposed Piñon Pine Power Project cooling tower operations. The Tracy on-site meteorological data were utilized in conjunction with tower design data as input to the model. The model predicted the probability (in hours per year) of fogging and icing over a dense grid of locations encompassing Interstate 80 (I-80). The actual receptor grid was comprised of 16 direction sectors (at 22.5° intervals) with receptor distances at 100-meter (328-foot) increments out to 2,000 meters (6,560 feet).

In addition to the main cooling tower, the proposed Piñon Pine Power Project would operate a single cell wastewater cooling tower (cross-flow design). Because the vapor emissions for the wastewater cooling tower would a small fraction of the emissions of the main tower, no modeling analysis of this cooling tower was performed.

# Technical Approach

The potential for visibility impairment (fogging) and icing due to the freezing upon impact of supercooled water droplets caused by the operation of existing Tracy and proposed Piñon Pine Power Project cooling towers was evaluated. The vapor plume emitted by a cooling tower would become visible (condense) when the sum of the water vapor concentration in the plume plus the ambient water vapor concentration reaches the saturation concentration for the ambient temperature. Saturation

vapor concentration is a function of temperature. As the temperature decreases, the amount of water vapor the atmosphere can hold before condensation occurs also decreases. Therefore, the maximum occurrences of visible plumes would be expected during periods when the background relative humidity is high and the temperature is low. Icing on road surfaces can result from two conditions. The first condition is the impaction of the condensed plume on road surfaces under freezing temperatures. The second condition is the deposition of drift droplets, which escape the cooling tower, on road surfaces with temperatures at or below the freezing point.

#### Source Data

The existing Tracy Station Cooling Towers #2 and #3 (cross-flow type) are and the proposed Piñon Pine Power Project cooling tower (counter-flow type) would be linear-mechanical draft wet design cooling towers. The design information required by the SACTI model for the towers is presented in Table D1-1. Based upon these data, the SACTI model internally computes tower performance for varying environmental conditions.

In the SACTI modeling, the vapor emissions from the cooling towers are assumed to be continuous (i.e., 8,760 hours per year). The actual estimated operating hours for these towers are much less than 100 percent of the time. Cooling Tower #2 augments the heat dissipation provided by the evaporation pond. During the winter months when ambient temperatures are low enough to provide sufficient heat dissipation through the evaporation pond alone, this tower does not operate.

# Meteorological Data

The SACTI model was applied with two years (1992 and 1993) of meteorological observations from the Tracy on-site database. These observations contain the parameter values required by the SACTI model. These parameters are:

- wind speed,
- wind direction,
- temperature,
- relative humidity, dew point temperature, and wet-bulb temperature.

Table D1-1. SACTI model input parameters.

Parameter		Cooling Tower	
	Tracy 2	Tracy 3	Piñon Pine
Tower Type	LMDCT	LMDCT	LMDCT
Number of Cells	3	3	3
Total Heat Dissipation (10° Btu/hr)	551.2	551.2	370.0
Input Airflow Rate (kg/sec)	1655.9	1623.0	3587.5
Drift Rate (g/sec)	3091.3	3091.3	126.2
Exit Diameter of Each Cell (m)	8.5	7.3	7.3
To	wer Dimensions		
Height (m)	18.1	18.1	15.2
Length (m)	33.1	33.1	40.2
Width (m)	21.1	21.1	12.8

Note: LMDCT = Linear-Mechanical Draft Cooling Tower

ISCST2 Modeling of Total Vapor Concentrations

The SACTI Model is designed to evaluate the fogging potential only from cooling towers. The impact of the combined emissions from all sources (e.g., cooling ponds, evaporation ponds, river) upon roadway receptors was calculated by use of the EPA Industrial Source Complex (ISCST2) Model, using water vapor as a "pollutant". On-site meteorological data from 1992 and 1993 were used in the ISCST2 analysis.

Since the SACTI Model does not generate hourly water vapor concentration estimates, the contribution of the cooling towers to ambient water vapor concentrations were also calculated with ISCST2. However, to obtain the necessary inputs for the ISCST2 model, the SACTI Model subroutines for enthalpy balance calculations were used to determine the water vapor release rate, volume flux and exit temperature for the cooling towers as a function of the following input parameters: heat dissipation rate (10<sup>6</sup> Btu/hr); input air flow (kg/s); ambient temperature (°F); and

dewpoint (°F). For the ISCST2 modeling of the cooling towers, constant values for the emission parameters were used which corresponded to an ambient temperature of 21°C (70°F) and a dewpoint of 17°C (62°F). This was a conservative assumption since the water vapor emission rate would be reduced for the lower temperatures under which fogging would be more likely to occur. In the ISCST2 modeling, vapor emissions from the cooling towers were treated as point sources subject to aerodynamic building downwash. Vapor emissions from the surface water bodies were considered as area sources. The calculation of hourly vapor emission from surface water bodies is discussed later.

Water vapor concentrations calculated by ISCST2 for Interstate 80 roadway receptor locations were added to the background vapor concentration using a concentration post-processor. The background concentrations were based upon the hourly reported ambient temperature and relative humidity values. The conservative assumption was made that there was no heating of the air due to the condensation of the water vapor. If this total vapor density at a receptor was greater than the vapor density at saturation conditions (ambient temperature and 100 percent relative humidity), then fogging due to source emissions was said to occur for the hour and receptor in question unless natural fog was present in the area. The ambient water vapor concentration is given by:

$$C_{wv} = \frac{1.0x10^{11}eMW_{wv}}{RT_a}$$

where:

 $C_{wv}$  = ambient water vapor concentration ( $\mu g/m^3$ )

e = ambient water vapor pressure (millibars)

MW<sub>wv</sub> = molecular weight of water vapor (18.016)

R = gas constant (8314.39 newton-m/(kg-mole °K))

 $T_{\bullet}$  = ambient temperature (°K)

The criterion for occurrence of natural fog was a relative humidity of 96 percent or greater. This selection was based upon an analysis of 1993 surface data from Reno, NV which showed that over 80 percent of the reported fog cases were for relative humidities of 96 percent or less. Relative humidities of 97, 98 or 99 percent were not even reported at Reno.

### WATER VAPOR EMISSIONS FROM ALL APPLICABLE SOURCES

# Description of Source Inventory

There are several different types of sources of water vapor emissions in the vicinity of the Tracy Power Plant. They consist of the following categories:

- "Point" source emissions come from a relatively small orifice, such as a cooling tower,
   and are emitted under controlled conditions;
- "Area" source emissions come from a large surface such as a pond, and these emissions are dependent upon the temperature of the pond as well as environmental factors such as the air temperature, relative humidity, wind speed, pressure, etc.;
- A "volume" source is characterized by a 3-dimensional emission configuration, such as the spray pattern from an aerator.

The locations of the water vapor emission sources used in this analysis are shown in Figure D1-1. Details regarding the locations, sizes, and emission rates (for non-area sources) are given in Table D1-2.

#### Point Source Vapor Emissions

ENSR has developed a spreadsheet-based model for the calculation of cooling tower emission parameters based upon the following input parameters: heat dissipation rate (10<sup>6</sup> Btu/hr); input air flow (kg/s); ambient temperature (°F); and dewpoint (°F). The input values and calculated output emission parameters are given in Table D1-2 for existing Tracy and proposed Piñon Pine Power Project cooling towers.

The use of these source parameters for all the hours of the simulation is conservative since fogging does not even occur at the source for this combination of temperature and dewpoint. At lower ambient temperatures, the water vapor emission rate is reduced and the difference between the tower exit temperature and the ambient temperature increases. This effect is shown in Figures D1-2 and D1-

3 for one of the two Tracy cooling towers. Other parameters used for ISCST2 Model input are given in Table D1-3.

Calculation of Hourly Emission Rates From Area Sources

Water vapor emissions from surface ponds were calculated by use of the Ryan-Harleman equation (Ryan, 1973). In a model evaluation study sponsored by the Electric Power Research Institute (EPRI, 1982), this equation was judged the "most satisfactory" in terms of both its theoretical basis and the comparison of its predictions with field measurements. The rate of cooling by evaporation is given by:

$$\Phi_{e} = (2.6(\Delta\Theta_{v})^{1/3} + 3.1W_{2})(e_{SW} - e_{2})$$
(2)

where:

 $\Phi_{\bullet} = rate \ of \ cooling \ (Watts/m^2)$ 

 $e_{rw}$  = saturation water vapor pressure at the temperature of the water (millibars)

e<sub>2</sub> = atmospheric water vapor pressure at 2 meters above the surface of the pond (millibars)

 $W_2$  = wind speed at 2 meters above the surface of the pond (m/s)

 $\Delta\Theta_{V} = \Theta_{Vs} - \Theta_{V2}$ 

$$\Theta_{VS} = \frac{T_S}{1 - \frac{0.378e_{SW}}{P_a}} \tag{3}$$

$$\Theta_{\nu_2} = \frac{T_2}{1 - \frac{0.378e_2}{P_a}} \tag{4}$$

T<sub>s</sub> = temperature of the water surface (°K)

 $T_2$  = temperature of the air 2 meters above the water surface (°K)

 $P_a$  = barometric pressure (mb)

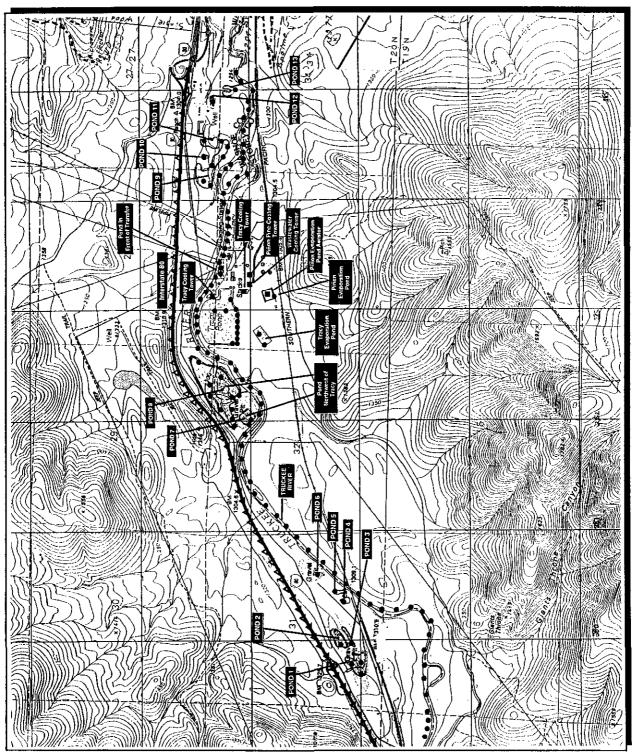


Figure D1-1. Location of vapor emission sources and receptors.

Source	ISCST1 Source ID	Source Type	Location		Emissions Source (g/s) Height (m)	Source Height (m)	Temp.	Velocity (m/s)	Velocity Diameter (m/s) (m)	Length of Side (m)°	Method of Determining Temp. (day	Sigma Y (m)*	Sigma Z (m)°
			X (m)	Y (m)							(Single)		
Tracy Cooling Tower #2	coorz	Point	-197.00	246.00	51870	12.60	17.16	7.17	8.53	V/N	V/N	N/A	V/N
Tracy Cooling Tower #3	гоогз	Point	-140.00	-50.00	51870	12.60	17.16	9.56	7.52	N/A	N/A	N/A	N/A
Piñon Pine Cooling Tower	ГТООЭ	Point	00.6	-76.00	35200	15.20	5.23	9.25	6.71	N/A	NIA	N/A	N/A
Wastewater Cooling Tower	МЕСНІ	Point	-51.00	-76.00	1260	5.64	2.00	7.62	4.27	N/A	N/A	N/A	N/A
Piñon Evaporation Pond Aerator	FOUNT	Volume	-144.60	-265.10	6.31	2.29	N/A	N/A	N/A	N/A	N/A	1.23	7.06
Piñon Evaporation Pond	PINEI	Area	-240.30	-313.30	Hourly	Ground	NIA	N/A	N/A	100	7	N/A	VIN
Truckee River	RIVI	Атеа	-4347.15	-1798.16	Hourly	Ground Level	N/A	NIA	N/A	ĸ	Daily river temperatures supplied by USGS.	V <sub>N</sub>	N/A
	RIVZ	Area	-4192.20	-1844.07	Hourly	Ground Level	P/N	N/A	N/A	75		N/A	NIA
	RIV3	Area	-4092.20	-1844.70	Hourty	Ground Level	N/A	N/A	N/A	7.5		N/A	V/N

of Sigma Y Sigma L. ng (m)' (m)' ay 1,4	er N/A N/A res	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/A N/A	N/4
Method of Determining Temp. (day running)	Daily river temperatures supplied by									
Length of Side (m)*	2	22	22	75	22	75	75	75	75	7
Diameter (m)	NIA	NIA	NIA	NIA	NIA	N/A	N/A	N/A	N/A	7///
. Velocity (m/s)	N/A	N/A	NIA	N/A	NIA	N/A	N/A	N/A	N/A	N/N
Temp. (k)	N/A	N/A	N/A	V/N	N	N/A	N/A	NIA	N/A	×
Emissions Source (g/s) Height (m)	Ground	Ground	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground
Emissions (g/s)	Hourty	Hourty	Hourly	Hourty	Hourty	Hourty	Hourly	Hourly	Hourty	Hourh
Location *	Y (m) -1828.77	-1828.77	-1798.16	-1790.51	-1782.86	-3636.59 -1800.00	-1821.12	-1828.77	-1744.60	-1637 47
Госа	X (m) -4011.43	-3921.13	-3847.87	-3710.14	-3546.59	-3636.59	-3383.03	-3236.69	-3142.00	300%
Source Type	Årea	Area	Area	Area	Area	Area	Area	Area	Area	Area
ISCST2 Source ID	RIV4	RIVS	RIV6	RIV7	RIV8	RIV9	RIVIO	RIVII	RIV12	RIV13
Source	Truckee River									

Sigma Z (m)*			<b>X</b>	N/A	N/A	V/N	N/A	N/A	V/N	N/A	V/N
Sigma Y (m)			NIA	NIA	N/A	N/A	NA	N/A	V/N	N/A	NA
Method of Determining	running)		Daily river temperatures supplied by USGS.								
Length of Side (m)*			έ.	75	75	75	75	75	75	75	75
Diameter (m)			N/A	N/A	V/N	N/A	V/N	V/N	V/N	V/N	V/N
Velocity (m/s)			N/N	N/A							
Temp.			N/A	NIA	N/A	N/A	N/N	N/A	N/A	N/A	NIA
Source Height			Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level
Emissions Source (g/s) Height (m)			Hourly	Hourly	Hourty	Hourly	Hourly	Hourly	Hourly	Hourly	Hourly
		Y (m)	-1515.05	-1377.31	-1270.19	-1155.41	-1025.33	-918.21	-803.43	-665.70	-550.93
Location		X (m)	-3133.39	-3142.00	-3090.35	-2995.66	-2892.36	-2789.06	-2677.16	-2556.64	-2418.91
Source			Area	Area	Area	Area	Area	Area	Area	Area	Area
Source In	3		RIV14	RIVIS	RIVI6	RIV17	RIV18	RIVIS	RIV20	RIV21	RIV22
Source			Truckee River (cont'd)				-				

Ί					[  -	Ī				•	Ł		
Source	Source ID	Source Type	Location		Emissions Source (g/s) Height (m)	Source Height (m)	Temp.	Velocity (m/s)	Diameter (m)	Length of Side (m)	Method of Determining Temp. (day running) '	Sigma Y (m)*	Sigma Z (m)*
			(m) X	Y (m)							ò		=
Truckee River (cont'd)	RIV23	Area	-2315.61	-451.45	Hourly	Ground Level	N/A	N/A	NIA	75		NIA	VIN
	RIV24	Area	-2203.70	-359.63	Hourty	Ground Level	N/A	N/A	NIA	27		N/A	N/A
	RIV25	Area	-2100.41	-260.16	Hourty	Ground Level	V/N	N/A	N/A	73		N/A	N/N
	RIV26	Area	-1979.89	-153.03	Hourly	Ground Level	V/N	N/A	N/A	73		N/A	NX
	RIV27	Area	-1850.77	-114.78	Hourly	Ground Level	N/A	N/A	N/A	7,5		NIA	N/A
	RIV28	Area	-1747.47	-68.87	Hourty	Ground Level	N/A	N/A	N/A	22		NIA	N/A
	RIV29	Area	-1618.35	-61.21	Hourty	Ground Level	N/A	N/A	NIA	ĸ		N/A	N/A
	RIV30	Area	-1506.44	-99.47	Hourly	Ground Level	N/A	N/A	NIA	75		N/A	N/A
	RIV31	Area	-1394.53	-191.29	Hourly	Ground Level	V/N	NA	N/A	75		N/A	N/A
	RIV32	Area	-1239.58	-237.20	Hourty	Ground Level	N/A	N/A	N/A	75		N/A	N/A
	RIV33	Area	-1127.68	-221.90	Hourty	Ground	N/A	N/A	V/N	75		N/A	V/N

Sigma Z (m)*		N/A	N/A	N/A	N/A	ΝΝ	ΝΊΑ	NIA	N/A	V/V	N/A	N/A	
Sigma Y (m)		N/A	N/A	V/N	NIA	N/A	NA	N/A	N/A	N/A	N/A	N/A	
Method of Determining Temp. (day running)	,			Daily river temperatures supplied by USGS.									
Length of Side (m)*		22	75	75	75	75	75	75	75	22	52	75	
Diameter (m)		N/A	N/A	NIA	N/A	N/A	N/A	N/A	N/A	N/A	V/N	NIA	
Velocity (m/s)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Temp.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	V/N	N/A	
Source Height (m)		Ground Level	Ground Level	Ground Level	Ground Level	Ground	Ground	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	
Emissions Source (g/s) Height (m)		Hourly	Hourty	Hourly	Hourty	Hourty	Hourty	Hourty	Hourty	Hourty	Hourh	Hourly	
tion •	Y (m)	-137.73	-61.21	0.00	45.91	160.69	252.51	344.33	373.55	385.60	385.60	385.60	
Location	X (m)	-1067.42	-989.95	-895.25	-809.17	-757.52	-714.48	-662.83	-542.25	-467.25	-392.25	-317.25	
Source Type		Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	
ISCST2 Source ID		RIV34	RIV35	RIV36	RIV37	RIV38	RIV39	RIV40	RIV41	RIV42	RIV43	R1V44	
Source		Truckee River (cont'd)	•		<u> </u>					<u> </u>			

Sigma Z (m)*			N/A	N/A	N/A	N/A	N/A	N/A	V/N	N/A	V/N	N/A	
Sigma Y (m)*			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Method of Determining Temp.	(day running)		Daily river temperatures supplied by USGS.										
Length of Side (m)			<b>K</b>	7.5	75	75	75	75	72	75	22	75	
Diameter (m)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Velocity (m/s)	•		N/A	N/A	N/A	NIA	N/A	N/A	N/A	N/A	N/A	N/A	
Temp.			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
	,		Ground Level	Ground	Ground Level								
Emissions Source (g/s) Height (m)			Hourly	Hourly	Hourty	Hourty	Hourty	Hourty	Hourty	Hourly	Hourty	Hourly	
		Y (m)	349.45	301.25	252.51	216.90	180.75	144.60	132.55	108.45	102.43	102.43	
Location		X (m)	-204.85	-129.85	-54.85	24.10	01.00	174.10	249.10	324.10	399.10	474.10	
Source Type	·		Area	Area	Area	Area	Area	Area	Area	Area	Area	Área	
ISCST2 Source ID			RIV45	RIV46	RIV47	RIV48	RIV49	RIV50	RIV51	RIV52	RIV53	RIV54	
Source			Truckee River (cons'd)										

Sigma Z (m)*		N/A	N/A	N/A	N/A	N/A	N/A	N/A	NIA	NIA	N/A	NIA		
Sigma Y (m)*		V/N	V/N	N/A										
Method of Determining Temp. (day running)		Daily river temperatures supplied by USGS.											v	
Length of Side (m)		52	75	75	7.5	75	75	75	75	25	22	75		
Velocity Diameter (m/s) (m)		NIA	N/A	N/A	N/A	N/A	N/A	N/A	NIA	N/A	N/A	N/A		
Velocity (m/s)		N/A	N/A	N/A	N/A	N/A	N/A	N/A	NIA	N/A	N/A	N/A		
Temp.		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	· •	
Source Height (m)		Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level	Ground Level		
Emissions   Source (g/s)   Height (m)	:	Hourly	Hourly	Hourty	Hourly	Hourly	Hourly	Hourly	Hourty	Hourly	Hourly	Hourly		
ion*	Y (m)	102.43	108.45	144.65	144.65	102.43	24.10	36.15	-24.10	-108.45	-36.40	-60.25		
Location	(m) X	549.10	710.95	795.30	903.75	994.13	1072.45	795.30	879.65	927.85	1012.20	1108.60		
Source Type		Area	Area	Area	Area	Area	Area	Area	Area	Area	Area	Area		
Source Type ID	-	RIVSS	RIV56	RIV57	RIV58	RIV59	RIV60	RIV61	RIV62	RIV63	KIV64	RIV65		
Source		Truckee River (cont'd)		•	•		•		•		•			

Cource	LCCSJSI	Silve	Location		Emissions Source Town Volocity Diamotor Longth of	Source	Temn	Velocity	Diamotor	I enoth of	Jo poquaM	Ciomo V	Somo Z
	Source	Туре			(\$/8)	Height (m)	(K)	(m/s)	( <b>m</b> )	Side (m)	Side (m) Determining Temp. (day	, (w)	, (w)
			(m) X	Y (m)							<b>i</b>		
Truckee River (cont'd)	RIV66	Area	1180.90	-24.10	Hourly	Ground Level	V/N	N/A	N/A	7.5		N/A	N/A
	RIV67	Area	1255.90	-24.10	Hourly	Ground Level	N/A	N/A	N/A	75		N/A	N/A
	RIV68	Area	1330.90	-24.10	Hourty	Ground Level	N/A	N/A	N/A	75		N/A	N/A
	RIV69	Area	1405.90	-132.55	Hourly	Ground Level	N/A	N/A	N/A	75		N/A	N/A
	RIV70	Area	1480.90	-132.55	Hourly	Ground Level	N/A	N/A	NIA	75		N/A	N/A
	RIV71	Area	1555.90	-132.55	Hourly	Ground Level	V/A	N/A	N/A	75		N/A	N/A
	RIV72	Area	1630.90	-132.55	Hourly	Ground Level	N/A	N/A	N/A	73		N/A	N/A
	RIV73	Area	1715.90	-108.45	Hourly	Ground Level	N/A	N/A	N/A	75		N/A	N/A
	RIV74	Area	1730.90	00:0	Hourty	Ground Level	N/A	N/A	N/A	75		N/A	N/A
	RIV75	Area	1805.90	00.0	Hourly	Ground	N/A	V/N	N/A	75		N/A	N/A

Source Loca		X(m)	Area -578.40	Area -278.40	Area -278.40	Area -578.40	Area -528.40	Area -478.40	Area -428.40	Area -378.40	Area -328.40	Area -178.40		
Location .		V(m)	72.30	228.00	128.00	22.30	22.30	22.30	22.30	22.30	22.30	84.40		
Emissions (o/c)			Hourby	Hourby	Hourly	Hourty	Hourty	Hourty	Hourty	Hourly	Hourty	Hourly		
Source Heiohr			Ground	Ground	Ground Level	Ground Level	Ground Level	Ground	Ground Level	Ground Level	Ground Level	Ground Level		
Temp.	<u> </u>		N/A	N/A	N/A	V/N	N/A	N/A	N/A	N/A	N/A	N/A		
Velocity (m/c)			N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Diameter (m)	<u> </u>		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Length of Side (m)			300	001	100	20	50	50	20	20	50	50		
Method of	Temp. (day running)		Daily temperatures supplied by Sierra	1 achte:									•	
Sigma Y	Ì		N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A		
Sigma Z	Ì		N/A	N/A	N/A	N/A	NIA	NIA	NIA	NIA	N/A	N/A		

Source	22S2S1	Source	Location		Emissions Source Temp.	Source	Temp.	Velocity	Velocity   Diameter   Length of	Length of	Method of	Sigma Y	Sigma Z
	Source ID	Туре			(8/8)	Height (m)	(3)	(m/s)	(w)		_	(m)	. (W)
			(m) X	Y (m)									
Tracy Evaporation Pond	EVAPI	Агеа	-502.50	-241.00	Hourly	Ground Level	NIA	N/A	N/A	125.0	7	N/A	<i>Y/N</i>
	EVAP2	Area	-627.50	-192.80	Hourly	Ground Level	NIA	V/N	N/A	0.08	2	N/A	V/N
Pond in front of Transfer Station	TRANI	Area	-12.10	168.70	Hourly	Ground Level	N/A	N/A	F/N	50.0	Daily river temperature supplied by USGS	N/A	<i>V/N</i>
	TRANZ	Area	37.90	168.70	Hourly	Ground Level	N/A	N/A	V/N	20.0		N/A	V/N
Pond I	PATI	Area	-3579.00	-1157.00	Hourh	Ground Level	N/A	N/A	V/N	0.001	11	NIA	V/N
	PAT2	Area	-3479.00	-1157.00	Hourly	Ground Level	N/A	N/A	V/N	0:001	-11	N/A	N/A
	ELV4	Агеа	-3543.00	-1057.00	Hourty	Ground Level	V/N	V/N	VIN	0.08	21	N/A	N/A
Pond 2	PAT4	Area	-3325.80	-939.90	Hourly	Ground Level	N/A	N/A	N/A	0.06	14	N/A	V/N
Pond 3	PAT8	Area	-3314.00	-3314.00 -1036.30	Hourly	Ground Level	N/A	N/A	V/N	0.59	12	NIA	V/N
Pond 4	PATS	Агеа	-2928.20	-964.00	Hourty	Ground	N/A	N/A	V/N	0.04	or	N/A	V/N

Source	ISCST2 Source ID	Source Type	Location	ion	Emissions (g/s)	Source Height (m)	Temp.	Velocity (m/s)	Diameter (m)	Length of Side (m)*	Method of Determining Temp. (day running)	Sigma Y (m)'	Sigma Z (m)*
			(m) X	Y (m)									
Pond 5	PAT6	Area	-2867.90	-927.80	Hourly	Ground Level	N/A	N/A	N/A	09	12	N/A	V/N
Pond 6	PAT7	Area	-2711.00	-747.10	Hourly	Ground	N/A	N/A	N/A	35	OI	N/A	V/N
Pond 7	EVNWII	Area	-1272.50	-108.50	Hourty	Ground Level	N/A	N/A	V/V	150	14	N/A	P/N
Pond 8	EVNWI	Area	-747.10	361.50	Hourly	Ground	N/A	N/A	V/N	001	21	N/A	N/A
	EVNW2	Area	-952.00	265.10	Hourly	Ground	N/A	N/A	N/A	200	21	N/A	N/A
	EVNW3	Area	-1052.00	265.10	Hourly	Ground Level	N/A	N/A	N/A	001	21	N/A	V/N
	EVNW4	Area	-879.70	165.10	Hourly	Ground Level	N/A	N/A	N/A	001	21	N/A	NIA
	EVNWS	Area	-1072.50	60.30	Hourh	Ground Level	N/A	N/A	N/A	200	21	N/A	V/N
	EVNW6	Area	-1172.50	160.30	Hourly	Ground Level	N/A	N/A	N/A	001	21	N/A	N/A
	EVNW7	Area	-1272.50	60.30	Hourly	Ground Level	N/A	N/A	N/A	001	21	N/A	PIN
	EVNW8	Area	-1172.50	60.30	Hourty	Ground	N/A	N/A	N/A	001	21	N/A	NIA
	EVNW9	Area	-1048.40	00.0	Hourty	Ground Level	N/A	N/A	N/A	20	21	N/A	N/A

Source	ISCST2 Source	Source Type	Location		Emissions Source (g/s) Height		Temp.	Velocity (m/s)	Velocity Diameter (m/s) (m)	Length of Side (m)	Method of Determining	Sigma Y (m)°	Sigma Z (m)*
	<u>a</u>					Ē					Temp. (day running) '		
			(w) X	Y (m)							:	- 1	;
Pond 8 (cont'd) EVNW10	) EVNW10	Area	1325.50	36.20	Hourly	Ground Level	N/A	N/A	NIA	50	77	V/N	V/N
Pond 9	НЕГМІ	Area	843.50	325.00	Hourty	Ground	N/A	N/A	N/A	001	17	N/A	NIA
	НЕГМ2	Area	843.50	225.00	Hourty	Ground	N/A	N/A	N/A	001	17	N/A	N/A
	HETMS	4700	01 880	276 90	Hourb	Ground	N/A	N/4	N/A	001	17	N/A	N/A
				2	- Company	Level				3	;		
	HELM4	Area	1205.00	60.30	Hourhy	Ground Level	V/N	N/A	N/A	001	17	N/A	N/A
	HELMS	Area	1097.00	108.50	Hourly	Ground Level	N/A	N/A	NIA	22	17	NIA	V/A
Pond 10	HELM8	Area	1060.40	265.10	Hourly	Ground Level	N/A	N/A	N/A	50	12	N/A	N/A
Pond 11	НЕГМ6	Area	1157.00	180.30	Hourty	Ground Level	N/A	N/A	N/A	75	]4	N/A	N/A
	HELM7	Area	1157.00	253.10	Hourty	Ground	N/A	N/A	N/A	75	14	NIA	N/A

, (w)		N/A	N/A					
, (m)		N/A	V/N	11000				
Determining Temp. (day running)*		2	0I	ea.				
Side (m)		25	20	4382.092 KmN) and are the southwest corner for area.	ų.			
(m)		V/N	V/N	southwest c	temperatur			
(m/s)		N/A	N/A	d are the	: ambient			
(S)		N/A	N/A	mN) an	bove the	rces.		Ì
		Ground Level	Ground Level	382.092 F	Celsius a re eaui-si	area sou		į
(g/s) Height (m)	_	Hourby	Hourly	78 KmE, 4.	perature in 2 sources o	n rates for		
	Y (m)	216.90	48.20	#3 (283.2	onstant temp e. All area	erly emissio		type.
	(m) X	1578.60	1663.00	relative to Tracy Unit #3 (283.278 KmE,	Negative temperatures denote the constant temperature in Celsius above the ambient temperature. Denotes lenoth of side of area source. All area sources are eaut-sided.	used to determine hourly emission rates for area sources.	ources.	Parameters not applicable to source type.
Туре		Área	Area	elative to	ratures d of side o	sed to de	volume s	applicat
Source		HELMIO	негм9	Locations are r	ative tempe otes lenoth	Temperatures u	Applies only to volume sources.	ameters not
		Pond 12	Pond 13	a Loca	e Nega	d Tem		N/A = Para

Table D1-3. Input and output parameters for the cooling tower emissions characterization.

Parameter (Input/Output)	Tracy (for each tower)	Piñon Pine
Heat Dissipation Rate (10° Btu/hr) (input)	551.2	370.0
Input Air Flow (kg/s) (input)	1623ª	3588
Ambient Temperature (°F) (input)	70	70
Dewpoint (°F) (input)	62	62
Vapor Release Rate (kg/s) (output)	51.9	35.2
Temperature Rise (°F) (output)	30.1	9.4

Value for Tracy #2 is slightly higher but the use of this lower value for both is conservative

The saturation vapor pressure of water was calculated as a function of temperature by use of the following expression (Lowe, 1977):

$$e_S = a_0 + T_C(a_1 + T_C(a_2 + T_C(a_3 + T_C(a_4 + T_C(a_5 + a_6T_C)))))$$
(5)

where:

 $e_s = saturation vapor pressure (millibars)$ 

 $T_c = temperature (°C)$ 

 $a_0 = 6.107799961$ 

 $a_1 = 4.436518521 \times 10^{-1}$ 

 $a_2 = 1.428945805 \times 10^{-2}$ 

 $a_3 = 2.650648471 \times 10^{-4}$ 

 $a_4 = 3.031240396 \times 10^{-6}$ 

 $a_5 = 2.034080948 \times 10^8$ 

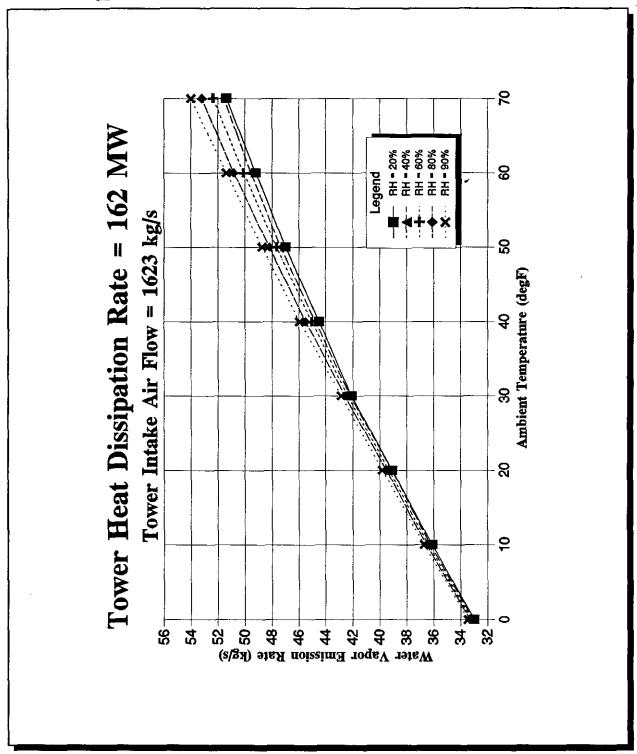


Figure D1-2. Variation of water vapor emissions with ambient temperature and relative humidity for each of the Tracy cooling towers.

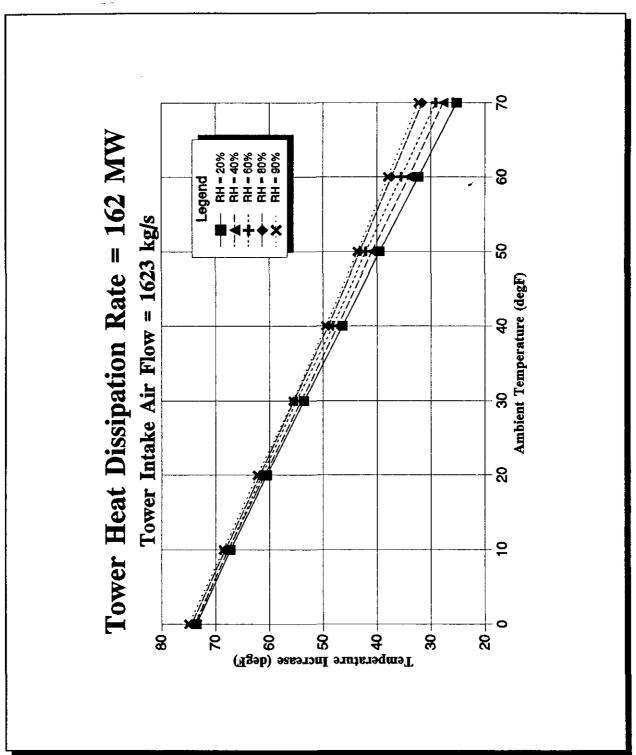


Figure D1-3. Variation of temperature increase with ambient temperature and relative humidity for each of the Tracy cooling towers.

 $a_6 = 6.136820929 \times 10^{-11}$ 

The water vapor pressure at 2 meters (6 feet) above the surface of the pond was calculated as follows:

$$e_2 = e_S \left( \frac{RH}{100} \right) \tag{6}$$

where:

 $e_s$  = saturation water vapor pressure at 2 meters (6 feet) above the pond surface (millibars) RH = relative humidity

The wind speed at 2 meters (6 feet) was estimated from measured wind speeds at 10 meters (33 feet) by use of the following profile equation from the EPA Industrial Source Complex (ISCST2) Model:

$$W_2 = W_{ref} \left( \frac{2}{Z_{ref}} \right)^p \tag{7}$$

where:

 $Z_{ref}$  = wind speed measurement height (meters) (10 meters in this case)

 $W_{ref}$  = measured wind speed at the reference height (m/s)

p = stability dependent wind profile exponent

= 0.07 (Stability Classes A and B)

= 0.10 (Stability Class C)

= 0.15 (Stability Class D)

= 0.35 (Stability Class E)

= 0.55 (Stability Class F)

The cooling rate calculated by use of Equation (2) was converted to an area source emission rate by use of the following expression:

$$QA = \frac{\Phi_{\epsilon}}{HV} \tag{8}$$

where:

QA = area source water vapor emission rate (g/m<sup>2</sup>/s)

HV = heat of vaporization of water (joules/g)

The heat of vaporization, HV, is a function of the temperature of the pond surface:  $HV=2500.3-2.369(T_s-273.15)$ 

(9)

where:

 $T_s = water surface temperature (°K)$ 

For high ambient relative humidities and light winds, the emission rate calculated from the equations given above is probably greater than the actual emission rate due to the formation of dense fog in a shallow layer directly above the pond surface. In calculating the emission rate, it has been conservatively assumed that the water vapor density above the pond is the same as that for ambient air.

As described in Table D1-2, each body of water was broken into one or more square area sources of varying size, with each having an area source emission rate of QA. This area source emission rate was updated each hour to account for changes in ambient temperature, relative humidity, wind speed, and barometric pressure. The temperature of the waterbody was updated on a daily basis.

Actual recorded temperatures for the SPPCo.-maintained surface water bodies and for the Truckee River were available on a daily basis. Surface temperatures for the other ponds were not available. Consultation with experts in ENSR's Water Quality group resulted in a recommendation to approximate the surface temperature by determining the running average of the surface air temperature over several days in the past. The length of time depended upon the area of the pond, and ranged between about 1 to 3 weeks (the longest period for the largest ponds).

Hourly emission rates were determined from the surface water temperature and meteorological factors using a special pre-processor. These hourly area source emissions were then input to a version of the ISCST2 model with enhancements to accommodate hourly emissions data input. ISCST2 calculated, at selected receptor locations on Interstate 80, hourly water vapor concentrations due to emissions from the area sources. "Point source" water vapor emissions from cooling towers were also used in the calculation of ambient concentrations. The ISCST2 model used the same meteorological

data to calculate ambient water vapor concentrations from the point sources as were used to compute the area source emission rates.

# Volume Source Vapor Emissions

The proposed Piñon Pine evaporation pond would include an aeration system that was modeled as a volume source in ISCST2. The following conservative assumptions were made in calculating the vapor emission rate from the water spray system:

- The water reaches a height of about 6.1 meters (20 feet) and during the process has broken into droplets 0.5 mm in diameter.
- The water temperature is 21°C (70°F)
- The ambient temperature and relative humidity are 10°C (50°F) and 30 percent, respectively.
- The wind speed is 10 mph

With these assumptions, about 5 percent of the droplet mass is evaporated during the fall from 61 meters (20 feet). For a 2 gallon per minute spray, this yields a vapor emission rate of 6.3 g/s.

# Distribution of Point and Area Source Vapor Emissions

The locations of point and area sources of vapor emissions are shown in Figure D1-1 along with the position of the 70 roadway receptors. Each of the waterbodies are comprised of square area sources of varying dimensions. The area source groups and the number of ISCST2 area sources comprising that group are given below:

- Truckee River 75 grid squares all having a side length of 75 meters (229 feet)
- Tracy Cooling Pond 10 grid squares with side lengths from 50 to 300 meters (152 to 914 feet)

- Northwest Evaporation Pond 11 grid squares with side lengths from 50 to 200 meters (152 to 610 feet)
- Patrick Construction 8 grid squares with side lengths from 35 to 100 meters (107 to 305 feet)
- Helms Construction 10 grid squares with side lengths from 25 to 100 meters (76 to 305 feet)
- Tracy Evaporation Pond 2 grid squares with sides lengths of 50 and 100 meters (152 to 305 feet)
- Transfer Station 2 grid squares with side lengths of 50 meters (152 feet)
- Proposed Piñon Pine Evaporation Pond (including an aerator labeled "Piñon Evaporation Pond Aerator" modeled as a volume source) - 2 grid squares with side lengths of 60 and 120 meters (183 to 366 feet)

# SACTI MODELING RESULTS

Impacts of the Tracy and proposed Piñon Pine cooling towers were evaluated with the SACTI model for the potential to create fogging and icing conditions on Interstate 80. Surface fogging is assumed to occur when a visible plume reaches ground level at the road surface. Icing is predicted to occur during freezing conditions when the visible plume impacts the road surface.

Interstate 80, which is oriented east-west, is located to the north of the Tracy and proposed Piñon Pine cooling towers. Tracy Cooling Towers #2 and #3, are approximately 360 meters (1,097 feet) and 640 meters (1,951 feet) from the Interstate, respectively. The proposed Piñon Pine cooling tower and the single cell waste-water cooling tower are approximately 660 meters (2,012 feet) from the Interstate.

No fogging or icing was predicted by the SACTI model on Interstate 80 due to the operation of the Tracy and proposed Piñon Pine cooling towers for both the 1992 and 1993 meteorological data

sets. Furthermore, no fogging/icing impacts were predicted at any modeled receptor location for the Tracy #2 and proposed Piñon Pine cooling towers for either year of meteorology. For the Tracy #3 tower, fogging impacts were predicted to occur at a total of three receptor locations for both years of meteorology. A maximum of 1 hour per year of fogging was predicted to occur at two receptors located at 200 and 300 meters (610 and 914 feet) to the west-southwest of the Tracy #3 tower for 1992 meteorology. No transportation routes are affected by any of these fogging impacts. No icing impacts were predicted for the Tracy #3 tower for either year of meteorology.

# ISCST2 MODEL RESULTS

Emissions from the cooling towers and surface waterbodies were input to the ISCST2 Model to calculate hourly water vapor concentrations at 70 receptor locations along Interstate 80. This modeling simulation was performed using meteorological and water temperature data for both 1992 and 1993. Hourly water vapor concentrations for individual sources were then combined for different source groups and compared with saturation vapor concentrations to determine whether fogging could be attributed to the source group. The results of this analysis for individual sources and source groups are presented in Table D1-4.

Based on analysis of meteorological data collected at the Tracy site, there were 232 and 550 hours of natural fog at the site for 1992 and 1993, respectively. These were hours in which the relative

Table D1-4. Results of the source fogging simulation.

Source Group	Hours of Source Fogging (1992)	Hours of Source Fogging (1993)
ALL EXISTING SOURCES (Natural, Industrial, etc.)	818	793
ALL FUTURE SOURCES (Existing plus Piñon Pine Sources)	835	824
PIÑON PINE INCREMENTAL IMPACT	17	31

humidity was reported to be 96 percent or greater. The rationale for the selection of 96 percent (rather than 100 percent) as an indicator of natural fog was presented previously. The fogging statistics presented in Table D1-4 include hours when natural fog was not present (relative humidity less than 96 percent), but local fogging was predicted due to the additional water vapor from the modeled sources. The ambient concentrations of water vapor inferred from on-site 10-meter tower measurements of temperature and relative humidity may be conservatively high because they could include a contribution from one or more of the existing sources of water vapor. The higher incidence of natural fog for 1993 can be attributed to the fact that for 16 percent of the hours in 1992, meteorological data was not available. By contrast, only 2 percent of the data was missing for 1993. Much of the missing data for 1992 was in the month of January which has a higher fogging frequency compared to other months of the year.

For 1992 and 1993 combined, the proposed Piñon Pine sources (cooling tower, mechanical evaporator and aerator) were predicted to increase the number of source fogging cases by only 48 hours. This is only a 3 percent increase in the number of source fogging hours predicted without the proposed Piñon Pine sources.

When interpreting the results for Tracy and the proposed project, the following points should be kept in mind:

- The calculated vapor emission rates for the water bodies are conservative since they do not account for the cooling of the water surface associated with the evaporation itself. Also, the vapor flux from the surface would be limited by the formation of fog directly above the surface during light winds. In the modeling it has been assumed that the vapor density above the water surface is always equal to the ambient value.
- The analysis did not account for the buoyant rise of the water vapor emissions due to the heating which accompanies the condensation of a portion of the water vapor. This buoyant rise would reduce the impact at ground level receptor locations. It would also induce additional turbulence and thereby reduce the vapor concentrations.
- The fogging impacts due to the Tracy and proposed Piñon Pine cooling towers are overstated since the ISCST2 modeling employed a constant water vapor emission rate and temperature difference corresponding to an ambient temperature of 21°C (70°F)

and a dewpoint of 17°C (62°F). If the emission rate and temperature difference were allowed to vary, the calculated impact for the cooling towers would have been substantially less. For the proposed Piñon Pine Power Project this would have resulted in a calculated incremental source fogging impact which would be even less than the 3 percent computed with the use of the conservative modeling approach.

• Due to the effect of atmospheric turbulence and meandering winds during the course of an hour, the fog associated with source emissions could be more widely distributed and patchy in nature than predicted by ISCST2, and may therefore present less of a visibility problem than naturally occurring fog.

# **CONCLUSIONS**

The SACTI modeling analysis addressed water vapor emissions from the cooling towers in a refined manner, and indicated no visible plume impacts on Interstate 80. Since the SACTI model could evaluate only cooling tower emissions, modeling of vapor emissions using ISCST2 was employed to assess the fogging impact of all sources of water vapor emissions in the vicinity of the Tracy Power Plant.

No fogging or icing was predicted by the SACTI model on Interstate 80 due to the operation of the Tracy and proposed Piñon Pine cooling towers for both the 1992 and 1993 meteorological data sets. A maximum of only 1 hour per year of fogging was predicted to occur at two receptors located at 200 and 300 meters (610 and 914 feet) to the west-southwest of the Tracy #3 tower for 1992 meteorology. No transportation routes are affected by any of these fogging impacts. No icing impacts were predicted for the Tracy #3 tower for either year of meteorology.

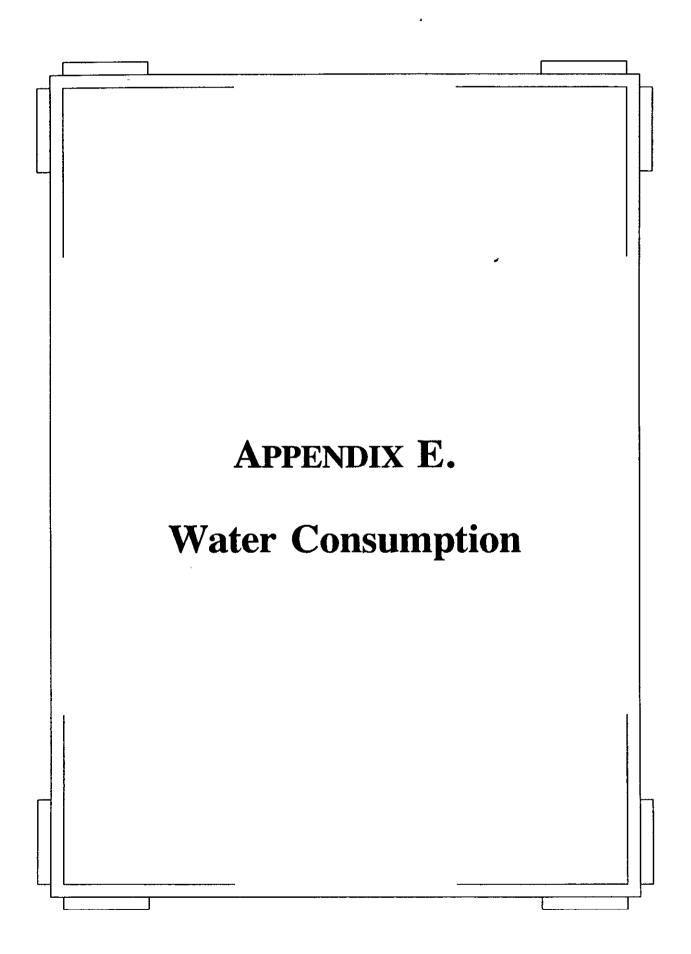
Emissions from the cooling towers and surface water bodies were input to the ISCST2 model to calculate hourly water vapor concentrations for 1992 and 1993 at several receptor locations along Interstate 80. There were an estimated 232 and 550 hours of natural fog at the site for 1992 and 1993, respectively. Fogging due to the local water vapor sources was considered to occur during hours when natural fog was not present (relative humidity less than 96 percent), but when local fogging was predicted due to the additional water vapor from the modeled sources. The total number of local fogging hours resulting from existing sources was predicted to be 818 and 793 for 1992 and 1993, respectively.

For 1992 and 1993 combined, the proposed Piñon Pine sources (cooling tower, mechanical evaporator and aerator) were predicted by ISCST2 to increase the number of source fogging cases by 48 hours. This is a 3 percent increase in the number of source fogging hours predicted without the Piñon sources.

The conservative nature of the ISCST2 model should be considered when assessing the significance of the modeling results. An indication of the level of conservatism inherent in the ISCST2 results can be determined by comparing the ISCST2-predicted cooling tower impacts with the SACTI results. The ISCST2-predicted impacts of the existing plus proposed cooling towers indicate that alone, these sources would cause approximately 13 hours of fogging in 1992 and 23 hours in 1993. This is contrary to the SACTI results, which indicated no additional fogging from these sources. Compared to the ISCST2 treatment, the SACTI model incorporates more sophisticated entrainment and thermodynamic formulations for the rise, transport, and evaporation of the vapor plumes. Therefore, the SACTI model results are more representative of actual conditions. Although the SACTI model is not designed to determine fogging impacts from sources other than cooling towers, this comparison does provide some indication of the level of conservatism in the ISCST2 model results.

The results of the ISCST2 modeling were also quite conservative with respect to the experience of eyewitnesses that drive by the Tracy Power Plant nearly every day. The total number of fogging hours (835 in 1992 and 824 in 1993) far surpass the typical experience of 10 fogging days reported by eyewitnesses.

Considering the conservatism of the ISCST2 predictions and the relatively minor impact from the proposed Piñon Pine sources that this model predicts, it can be concluded that the modeling analysis demonstrates that there would be no significant increase in fogging due to increased water vapor emissions associated with the new sources at the facility.



# **APPENDIX E: WATER CONSUMPTION**

Detailed estimated water consumption rates for the Tracy Power Station with and without the proposed Piñon Pine Power Project are presented in Tables E-1a through E-2b [in acre-feet and cubic feet per second (cfs)]. The changes in water consumption due to the proposed Piñon Pine Power Project's impact on Tracy Power Station operations is presented in Table E-3. Historical water consumption data also are presented (Table E-4). A discussion of this data is presented in section 4.1.4.1.

Table E-1a. Tracy Power Station projected water use (with Piñon Pine) in acre-feet.

Total	1,562	1,643	1,651	2,622	2,493	2,843	3,057	2,924	3,002	2,987	2,874	2,768	2,830	2,779	2,793	2,742	2,574	2,730	2,694		2,609
DEC	08	82	208	204	238	242	237	228	231	228	229	228	222	225	722	219	208	211	211		708
NOV	102	84	11	198	185	248	237	231	224	225	223	222	217	219	220	214	214	217	215	_	198
OCT	129	121	126	279	208	270	244	262	256	255	228	225	230	225	220	197	204	213	217		216
SEP	163	165	171	260	226	268	277	272	265	274	253	249	268	241	229	226	223	227	226		236
AUG	184	200	190	225	221	285	294	277	276	270	273	271	269	258	259	254	249	250	244	<u>,</u>	250
JUL	177	209	196	226	222	264	300	297	282	282	280	276	276	265	256	253	246	246	244		253
JUN	137	164	154	211	194	207	202	199	204	244	190	192	220	224	189	183	222	228	228		199
MAY	169	197	209	225	229	236	266	256	253	274	267	177	215	208	272	273	193	195	206		227
APR	154	182	132	235	256	225	258	178	268	244	242	221	241	235	230	237	158	255	238		220
MAR	110	68	38	202	204	233	282	248	290	257	258	269	247	259	257	258	232	259	234		223
FEB	73	65	75	201	173	178	239	250	232	722	727	231	223	218	223	218	219	222	221		196
JAN	83	85	75	156	136	161	222	226	222	206	206	205	205	202	210	210	208	208	211		181
YEAR	1993	1994	1995	1996	1997	8661	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011		Avg.

Monthly distribution based on projected monthly power generation.

(cfs).
second
t per secor
feet ]
cubic
ï
ine)
Piñon P
(with
projection
use p
water
Station
Power
Tracy
Table E-1b.

DEC	1.3	1.3	3.4	3.3	3.9	3.9	3.9	3.7	3.8	3.7	3.7	3.7	3.6	3.7	3.7	3.6	3.4	3.4	3.4	3.4
NOV	1.7	1.4	1.3	3.6	3.1	4.2	4.0	3.9	3.8	3.8	3.8	3.7	3.6	3.7	3.7	3.6	3.6	3.6	3.6	3.3
OCT	2.1	2.0	2.0	4.5	3.4	4.4	4.0	4.3	4.2	4.2	3.7	3.7	3.7	3.7	3.6	3.2	3.3	3.5	3.5	3.5
SEP	2.7	2.8	2.9	4.	3.8	4.5	4.7	4.6	4.5	4.6	4.	4.2	4.5	4.0	3.8	3.8	3.7	3.8	3.8	4.0
AUG	3.0	3.3	3.1	3.7	3.6	4.6	8.4	4.5	4.5	4.	4	4.4	4.4	4.2	4.2	4.1	4.0	4.1	4.0	4.1
JUL	2.9	3.4	3.2	3.7	3.6	4.6	4.9	4.8	4.6	4.6	4.5	4.5	4	4.3	4.2	4.1	4.0	4.0	4.0	4.1
JUN	2.3	2.7	2.6	3.5	3.3	3.5	3.4	3.3	3.4	4.1	3.2	3.2	3.7	3.6	3.2	3.1	3.7	3.8	3.8	3.4
MAY	2.8	3.2	3.4	3.7	3.7	3.8	4.3	4.2	4.1	4.5	4.3	2.9	3.5	3.4	4.4	4.	3.1	3.2	3.3	3.7
APR	2.6	3.1	2.2	4.0	4.3	3.8	4.3	3.0	4.5	4.1	4.1	3.7	4.1	4.0	3.9	4.0	2.7	4.3	4.0	3.7
MAR	1.8	1.5	9.0	3.8	3.3	3.9	4.6	4.0	4.7	4.2	4.2	4.4	4.0	4.2	4.2	4.2	3.8	4.2	3.8	3.6
FEB	1.0	1:2	1.3	3.5	3.1	3.2	4.3	4.4	4.2	4.1	4.1	4.0	4.0	3.9	4.0	3.8	3.9	4.0	4.0	3.5
JAN	1.3	1.4	1.2	2.5	2.2	2.6	3.6	3.7	3.6	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.4	3.4	3.4	2.9
YEAR	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Avg.

Monthly distribution based on projected monthly power generation.

2016 17 84 15. Nov Table E-2a. Tracy Power Station projected water use (without Piñon Pine) in acre-feet. 1<u>8</u>8 SEP AUG 동 <u>\$</u> 4. Ę MAY | APR MAR 8 8 FEB 55 25 75 JAN YEAR 1998 1999 

Monthly distribution assumes same as "w/ Piñon Pine" distribution.

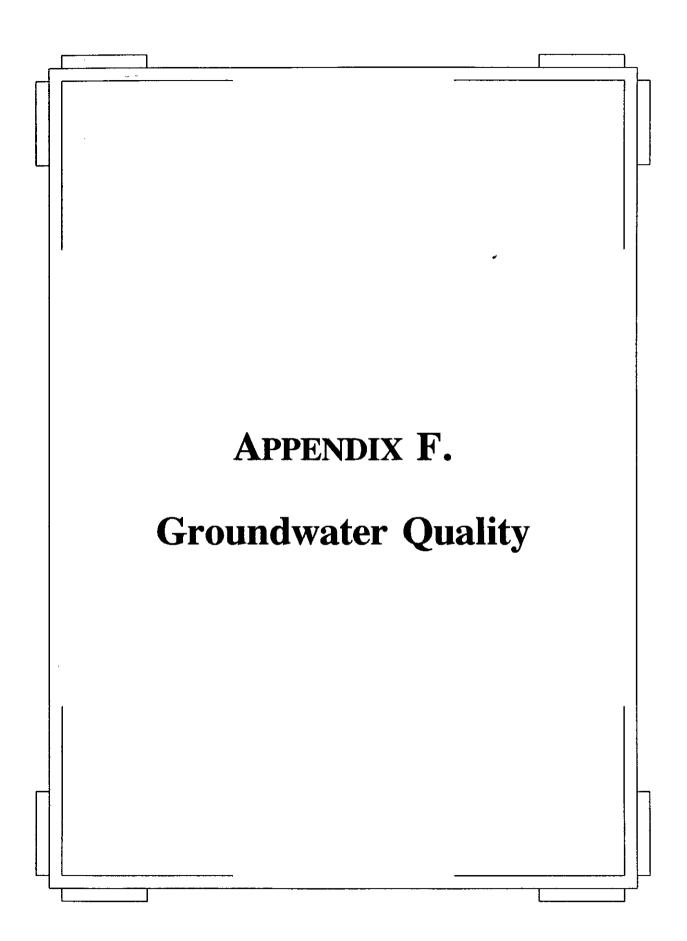
E-4

	DEC	1.3	1.3	3.4	3.3	3.8	3.1	2.6	2.4	2.5	2.4	2.4	2.3	2.2	2.0	2.1	2.0	1.8	1.9	1.9	4:2
is).	Nov	1.7	1.4	1.3	3.3	3.1	3.3	2.7	2.5	2.5	2.5	2.4	2.3	2.2	2.1	2.1	2.0	1.9	2.0	2.0	2.3
second (c	OCT	2.1	2.0	2.0	4.5	3.4	3.5	2.7	2.8	2.8	2.7	2.4	2.3	2.3	2.0	2.0	1.8	1.8	1.9	1.9	2.5
feet per	SEP	2.7	2.8	2.9	4.4	3.8	3.6	3.1	3.0	3.0	3.0	2.7	2.6	2.8	2.3	2.2	2.1	2.0	2.1	2.1	2.8
in cubic	AUG	3.0	3.3	3.1	3.7	3.6	3.7	3.2	2.9	3.0	2.9	2.9	2.8	2.7	2.3	2.4	2.3	2.2	2.3	2.2	2.9
iñon Pine	JUL	2.9	3.4	3.2	3.7	3.6	3.7	3.3	3.1	3.1	3.0	2.9	2.8	2.7	2.4	2.3	2.3	2.1	2.2	2.2	2.9
without P	NOL	2.3	2.7	2.6	3.5	3.2	2.8	2.3	2.2	2.3	2.7	2.1	2.0	2.3	2.1	1.8	1.7	2.0	2.1	2.1	2.4
ojection (	MAY	2.8	3.2	3.4	3.7	3.7	3.0	2.9	2.7	2.8	2.9	2.8	1.8	2.1	1.9	2.5	2.5	1.7	1.8	1.8	2.6
er use pr	APR	2.6	3.1	2.2	4.0	4.3	3.0	2.9	1.9	3.0	2.7	2.6	2.3	2.5	2.2	2.2	2.2	1.4	2.4	2.2	2.6
ation wat	MAR	1.8	1.5	9.0	3.3	3.3	3.1	3.1	2.6	3.2	2.7	2.7	2.7	2.5	2.3	2.4	2.3	2.0	2.4	2.1	2.5
Power St	FEB	1.3	1.2	1.3	3.5	3.1	2.5	2.9	2.8	2.8	2.7	2.6	2.5	2.5	2.2	2.3	2.1	2.1	2.2	2.2	2.4
b. Tracy	JAN	1.3	1.4	1.2	2.5	2.2	2.1	2.4	2.4	2.4	2.2	2.2	2.1	2.0	1.8	1.9	1.9	1.8	1.9	1.9	2.0
Table E-2b. Tracy Power Station water use projection (without Piñon Pine) in cubic feet per second (cfs).	YEAR	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Avg.

combination of units being utilized at Tracy Power Changes in water use in cfs due to the proposed Piñon Pine Power Project's impact on Tracy Power Station operations." 4:1 4. 4. 1:7 9 4. 4. 1.4 1.5 8.0 1.7 0.0 1.6 1.6 8.0 1.6 1.5 0.0 3 4. 1.6 1.6 1.6 1.6 0.0 0.0 0.0 0.0 0.0 6.0 1.3 1.2 1.3 NOV 1.6 1.6 0.0 1.3 1.4 7. 1.4 1.5 1.5 0.0 0.0 0.0 6.0 1.4 1.3 0.0 0.0 0.0 0.0 0.0 1.5 1.6 1.6 1.6 1.7 1.7 SEP 6. 1.5 1.8 1.7 the years due to the 0.0 0.0 0.0 0.0 0.0 1.0 1.6 9.1 5.1 9.1 1.6 00 6:1 1.7 AUG 0.0 0.0 0.0 0.0 0.1 1.6 1.6 9.1 1.7 1.9 1.8 1.8 1.9 1.8 0.0 1.7 1.5 1.7 JUL Water usage amounts at Tracy Station could fluctuate slightly over. 0.0 NO 0.0 0.0 0.0 0.0 0.7 1.2 1.4 1.2 1.4 1.4 4. 1.7 1:1 1.1 Ξ MAY | 0.0 2.0 0.0 0.0 0.0 0.0 0.8 1.4 1.5 1.3 1.6 1.5 1.1 4. 1.5 1.4 1.5 0.0 0.0 0.0 0.0 8.0 4. 0.1 1.5 1.4 4. 4. 1.6 1.7 1.7 ∞. 1.2 6. 0.0 Station, especially for peaking purposes. 0.0 8. 1.6 1.9 MAR 0.0 0.0 1.5 1.5 1.6 0.0 FEB 0.0 0.0 0.0 0.7 1.4 1.5 1.5 1.6 1.8 1.7 1.8 0.0 JAN 0.0 0.0 0.0 0.5 1.2 1.3 1.2 1.2 1.2 1.2 1.5 1.5 1.5 1.6 Table E-3. YEAR 1993 1996 1998 2010 1994 1995 2000 2002 2004 2006 2008 2009 1997 1999 2003 2005 2007 2011 2001

E-6

													LOGI
						1,000	1,000 Gallons						
1985	268	1,130	1,798	7,407	5,952	1,965		5,256	4,134	999	3,055	7,610	44,463
1986	4,802	6,281	7,128	10,698	7,722	11,963	866'6	6,602	5,633	0	0	0	70,82
1987	10,923	282	2,542	208	7,895	2,386	3,510	3,456	5,661	809	1,176	17,126	56,071
1988	20.885	17,631	23,021	22,911	15,987	15,779	15,120	21,227	16,139	666	15,853	19,645	205,146
1989	27,676	34,550	l	30,230	29,183	31,570	l	50,045	38,975	36,152	26,913	20,780	400,674
9661	17,121	27,825	6,053	32,544	48,391	36,146	ı	54,148	54,784	63,319	21,920	33,672	450,792
1991	22,686	17,472	29,284	36,500	42,922	60,984		69,594		79,260		41,855	564,47
1992	34,411	33,128		54,944	62,814	66,406	i	71,975	799'09	54,608	37,610	44,058	637,167
1993	32,594	24,962	51,483	42,516	38,485	32,747							
						Aci	Acre-feet						
1985	0.8	3.5	5.5	722.7	18.3	9.0	16.0	16.1	12.7	2.0	4.6	23.4	136.
1986	14.7	19.3	21.9	32.8	23.7	36.7	30.7	20.3	17.3	0.0	0.0	0.0	217.4
1987	33.5	6.0	7.8	1.6	24.2	7.8	10.8	10.6	17.4	1.9	3.6	52.6	172.
1988	63.9	54.1		70.3	49.1	48.4	4.6.4	65.1	49.5	3.1	48.6	6.03	629.6
1989	84.9	106.0		92.8	9.68	6.96	142.7	153.6	119.6	110.9	82.6	63.8	1230.2
1990	52.5	85.4		6:66	148.5	110.9	168.4	166.2	168.1	194.3	67.3	103.3	1383.
1661	9.69	53.6		112.0	131.7	187.2		213.6	159.8	243.2	145.8	128.4	1732
1992	105.6	101.7	139.0	168.6	192.8	203.8	218.7	220.9	186.2	167.6	115.4	35.2	1955
1993	100.0	9.92	158.0	130.5	118.1	100.5							
						Cubic Feet	per S						
1985	0.0	0.1	0.1	0.4	0.3	0.1	0.3	0.3	0.2	0.0	0.2	0.4	
1986	0.2	0.3	9.0	0.6	0.4	9.0	0.5	0.3	0.3	0.0	0.0	0.0	
1987	0.5	0.0	0.1	0.0	0.4	0.1	0.2	0.2	0.3	0.0	0.1	0.0	
1988	1.0	0.9		1.2	0.8	0.8	0.8	1.1	8.0	0.0	0.8	1.0	
1989	1.4	1.9		1.6	1.5	1.6	2.3	2.5	2.0	1.8	1.4	1.0	
1990	6.0	1.5	0.3	1.7	2.4	1.9	2.7	2.7	2.8	3.2	1.1	1.7	
1991	1.1	1.0		1.9	2.1	3.1	3.2	3.5	2.7	4.0	2.5	2.1	
1992	1.7	1.8		2.6	3.1	3.4	3.6	3.6	3.1	2.7	1.9	2.2	
1993	1.6	1.4	2.6	2.2	1.9	1.7							
			-										
Avg.	1.0	1.0	1.1	1.4	1.4	1.5	1.7	1.8	1.5	1.5	1.0	1.2	



# APPENDIX F: GROUNDWATER QUALITY

This appendix presents background information, including methodologies used for groundwater quality surveys conducted during the preparation of this EIS. The information presented in this appendix was used to reach the conclusions presented in the Affected Environment and Environmental Consequences chapters of this document. Additional information regarding groundwater quality can be found in the Water Quality Technical Report, available in the reading rooms (see Appendix H).

The overall objective of drilling and installing monitoring wells was to obtain sufficient geologic, hydrologic, and chemical data to adequately characterize the groundwater baseline conditions in the vicinity of the proposed Piñon Pine Power Project. The geologic/stratigraphic data were used to refine the conceptual hydrogeologic model of the site and as input to the numerical model. Data on groundwater levels were used to determine groundwater flow directions and to calibrate the numerical model. Aqueous geochemical data were used to evaluate the existence and spatial extent of seepage from either the cooling or evaporation ponds. Data from wells surrounding the cooling pond also were used to evaluate the extent of the hydrologic connection between the cooling pond and the Truckee River.

The locations of the 12 monitoring wells and existing water supply wells are depicted in Figure F-1. Monitoring Wells MW-1 through MW-4 are located along the four sides of the evaporation pond to gather data on the groundwater level and flow direction in the immediate vicinity of the pond. Monitoring Wells MW-5, MW-7, and MW-8 are located along the periphery of the cooling pond to obtain data on the interaction between the cooling pond and the Truckee River. In addition, MW-7 is located along the center line of a geophysical anomaly identified by the surface geophysical surveys. Location of MW-9 was originally planned approximately halfway between the cooling pond and the evaporation pond to obtain data on groundwater levels. However, it was moved closer to the evaporation pond because restricted access along the northern border of the evaporation pond resulted in MW-3 being located towards the extreme northwestern corner of the pond. Monitoring Well MW-6 is located between the fuel storage tanks and water-supply Well 3. Monitoring Well MW-6 was used to obtain groundwater level data and evaluate the possibility of leakage from the fuel storage tanks. Monitoring Well MW-10 is located along the southern boundary of the site to collect groundwater elevation data and determine if there was any downgradient seepage from the evaporation pond.

Monitoring Well MW-12 is located upgradient of the site to provide both groundwater level data, and more importantly, data on the background geochemical signature of the groundwater flowing beneath

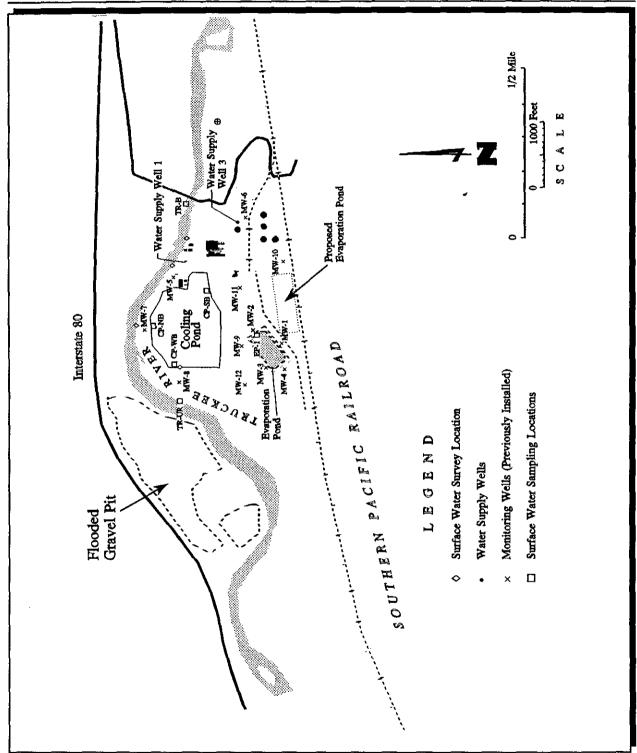


Figure F-1. Locations of existing water supply wells and monitoring wells.

the center of the site. Monitoring Well MW-11 is located near the center of the site, and is primarily used to collect groundwater elevation data, as well as geochemical data from beneath the central portion of the site.

The depth of each monitoring well was determined by site-specific conditions. Each well was designed to be completed approximately 2.1 meters (7 feet) below the seasonal high groundwater level. Thus, as a result in variation in site topography and groundwater elevations, MW-5 is the shallowest and MW-10 is the deepest well (see Table F-1).

I abic I I.	Dulliman J O.	inomion in	THE RESIDENCE OF THE PERSON OF
ļ	Į.	1	Total Depth (ft)

Summary of monitoring well installation

Table F-1

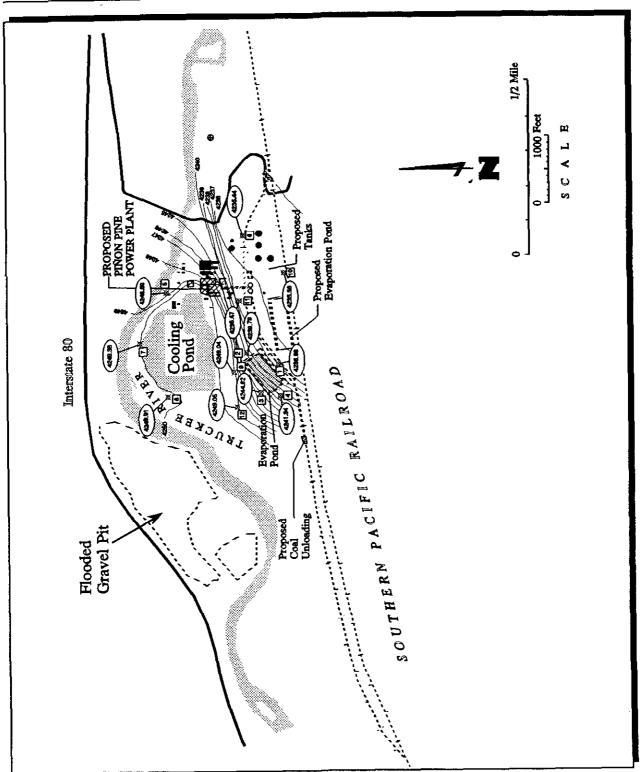
Well	Depth to	Total De	Well	Screen	Date
	Water (ft)			Length	Completed
MW-1	36.2	44.5	43.2	10	3/24/93
MW-2	35.1	44.25	42.1	10	3/31/93
MW-3	28.8	39.7	35.8	10	3/29/93
MW-4	30	43.8	42	15	3/26/93
MW-5	11.6	19.3	18.5	10	3/16/93
MW-6	44.55	54.7	51.5	10	3/19/93
MW-7	9.9	20	16.9	10	3/22/93
MW-8	12.9	24.2	19.9	10	3/23/93
MW-9	31.8	44.9	43.8	15	3/30/93
MW-10	46.7	60	58.7	15	3/18/93
MW-11	35.5	49.3	47.5	15	3/17/93
MW-12	10.1	20.5	17.1	10	3/23/93

Upon completion of well installation, the location, surface elevation, and elevation of the top-ofcasing of each well was surveyed (see Table F-2). Water level measurements were made in each boring during drilling. Measurements were made at the start and end of each day. Upon completion, each monitoring well was measured daily until completion of the drilling program. After all the monitoring wells were developed and allowed to recover, a round of water level measurements was taken in late March 1993, prior to sampling each well (see Figure F-2). Approximately 2 months later, a round of water level measurements was taken immediately prior to performing an aquifer test on each monitoring

Table F-2. Results of the well location survey.

Well	Northing	Easting	PVC (ft MSL)	Casing (ft MSL)	Ground (ft MSL)	Stickup (ft)	Water Surface
MW-1	1753086	233704.6	4275.74	4275.97	4272.9	2.84	
MW-2	1753578.4	233884.2	4277.19	4277.57	4274.7	2.49	
MW-3	1753369	233220.5	4271.42	4271.74	4268.7	2.72	
MW-4	1753064.9	233195.9	4273.50	4273.88	4276.8	2.7	
MW-5	1754857.7	234834.5	4259.45	4259.78	4259.6	-0.15	
MW-6	1753651.3	235733.3	4279.64	4279.92	4279.7	-0.06	
MW-7	1755286.5	234029.3	4259.22	4259.49	4259.3	-0.08	
MW-8	1754825.1	233179.7	4264.49	4264.69	4261.7	2.79	
MW-9	1753770.6	233560.5	4283.66	4284.01	4280.6	3.06	
MW-10	1752992	235142	4281.90	4282.18	4282.1	-0.2	
MW-11	1753708	234701.4	4271.47	4271.80	4271.6	-0.13	
MW-12	1753731.3	233021.4	4261.55	4261.96	4258.7	2.85	
Evaporation Pond	1753526.6	233801.8					4272.34
Cooling Pond	1754833.7	233328.3					4251.11
Truckee River	1754656.5	236121.5					4244.49
Truckee River	1754672.9	235456					4247.97
Truckee River	1754884.3	234997.8					4248.65
Truckee River	1755338.2	234093					4249.17
Truckee River	1754855.2	233037.4					4251.08

well. Water level measurements were also taken just before sampling rounds performed in July and September. Each round of water level measurements was made by one individual using a single electric tape to help minimize measurement errors. The accuracy of measurement is  $\pm 0.1$  foot. Water levels are summarized in Table F-2.



Groundwater levels during the first round of site sampling (April 2-3, 1993). Figure F-2.

The groundwater flow patterns across the site are based on the groundwater elevations measured in the monitoring wells as presented in Table F-3. These data were used to calibrate a finite-difference numerical model. These flow patterns are based on the groundwater elevations predicted by the numerical model.

Samples of groundwater and surface water were obtained from site wells and ponds respectively. These samples were analyzed to determine the geochemical characteristics of the water. This geochemical "signature" is used to evaluate the interaction between surface water and groundwater bodies and to discern groundwater mixing patterns.

Groundwater samples were obtained from each monitoring well using a submersible pump attached to PVC discharge tubing. Each monitoring well was allowed to recover at least 24 hours after well development activities were completed. A minimum of 20 casing volumes was discharged through the system prior to taking the sample to ensure that the apparatus was adequately decontaminated from previous sampling and that samples were representative of the environment. The pumping rate was approximately 1 gpm. There were three exceptions to this procedure. Because of the low yield of MW-3 and MW-4, less than 10 well volumes were extracted from each well; and since water-supply Well 3 is in continuous operation, the sample was taken from the discharge stream of the well.

A water sample consisted of two, 1-liter polyethylene bottles and one 500-ml amber glass bottle. Clean, unused polyethylene and glass containers were employed and the samples were delivered to the laboratory for analysis within 8 hours of collection. Sampling equipment was rinsed with distilled water prior to insertion into each well. Samples were not field-filtered during the first round (April 1993); however, samples having visible turbidity (MW-3, -4, and -8) were filtered by the laboratory prior to analysis. Thus, it is possible that constituents adsorbed onto clays or forming colloidal dispersions may impact the geochemical data for this round. For the second round (July 1993), each sample was analyzed for both total (unfiltered) and dissolved (laboratory-filtered) metals. Samples from the third round were all field-filtered through a  $0.45\mu$  in-line filter using a peristaltic pump.

Each 1-liter water sample, which was not sent for laboratory filtering, was preserved with nitric acid to pH < 2 to allow preservation of metals. The remaining 1-liter and 500-ml samples from each well were not preserved to allow for analysis of other constituents (e.g., hardness and alkalinity) or for laboratory filtering. Immediately after collection, the samples were placed in a cooler containing ice.

Table F-3. Depth to groundwater measured in monitoring wells, 1993.

		Depth to Groundw	ater (feet below t	op of casing)	
Well	31 March 1993	2-3 April 1993	20 May 1993	29 July 1993	2-3 Sept 1993
MW-1	37.77	38.86	38.51	38.12	38.83
MW-2	35.68	37.40	36.57	36.34	37.80
MW-3	27.31	26.80	25.69	25.74	26.35
MW-4	37.08	32.16	31.16	30.09	31.30
MW-5	10.92	10.86	10.34	11.92	12.40
MW-6	44.31	44.20	43.90	43.42	44.25
MW-7	9.75	9.86	9.35	10.84	11.22
MW-8	14.73	14.58	13.92	14.50	15.25
MW-9	34.79	34.62	33.75	34.06	35.12
MW-10	46.35	46.32	46.00	46.60	46.40
MW-11	35.13	35.00	34.66	34.22	35.22
MW-12	12.60	12.50	11.83	11.94	12.60

Upon completion of each work day, all samples were transported to the laboratory.

The intake of the sampling pump was placed approximately 2 feet above the bottom of the well screen. The sample from water-supply Well 1 was obtained from a sampling valve located at the well head. The sample from water-supply Well 3 was obtained from a sampling valve located approximately 540 feet from the wellhead, near the southeast corner of Unit 3. Figure F-1 depicts the locations of wells sampled, identified by well number. Surface water samples were collected in the immediate vicinity of the water surface elevation survey location points identified by diamonds. A total of 25 water samples were obtained during the first round.

For the second round, only the 12 installed monitoring wells (MW-1 through MW-12) were sampled with a filtered and an unfiltered sample for each; this round totaled 24 samples. The third sampling round involved all the locations from the first round plus the three monitoring wells (TW-1 through TW-3) previously installed for the landfill to the south of the plant.

Samples were field tested for temperature, pH, and specific conductance. Results for the first sampling round are also presented in Table F-4. During the first round, two groundwater samples were analyzed for PCBs in accordance with EPA method 608, and four samples were analyzed for total petroleum hydrocarbons (TPH) in accordance with EPA method 8015. All samples underwent analysis for major anions, cations, and selected metals using plasma spectroscopy and standard EPA accepted analytical techniques for designated species.

Quality assurance (QA) for the samples was accomplished by the standard EPA laboratory QA program, supplemented by field duplicate samples and a field blank of distilled water. Six samples were submitted to the laboratory in duplicate: those from wells MW-8 and MW-10 and the sample from the evaporation pond during the first round, and MW-02, MW-12, and the downstream (bridge) sample from the Truckee River during the third round. The duplicate samples allow analytical precision to be estimated.

It is common to use "relative percent difference" (RPD) as a measure of precision and to define it, for a sample that has two replicate results for a given parameter, as the difference of the results divided by the average of the results, giving it a range of zero to 100 percent. This measure cannot be applied to results that are below the detection level, or for pH that is not measured from a zero point. RPDs were calculated for each of the analyses done on the six samples duplicated, yielding a total of 97 independent measures of precision.

Although no formal standards for precision were set ahead of time for acceptability of the analytical data, it is common to consider (for inorganic analyses):

- 0 to 5 percent RPD as very good
- 5 to 10 percent RPD as good
- 10 to 25 percent RPD as fair
- Greater than 25 percent RPD as poor

Using this definition, the results appear to be very good overall, including 78 percent of the samples in this category. Precision, on average, was slightly lower (good) for arsenic and only fair for copper, strontium, and zinc. Poor precision, on average, was noted for phosphorus and iron.

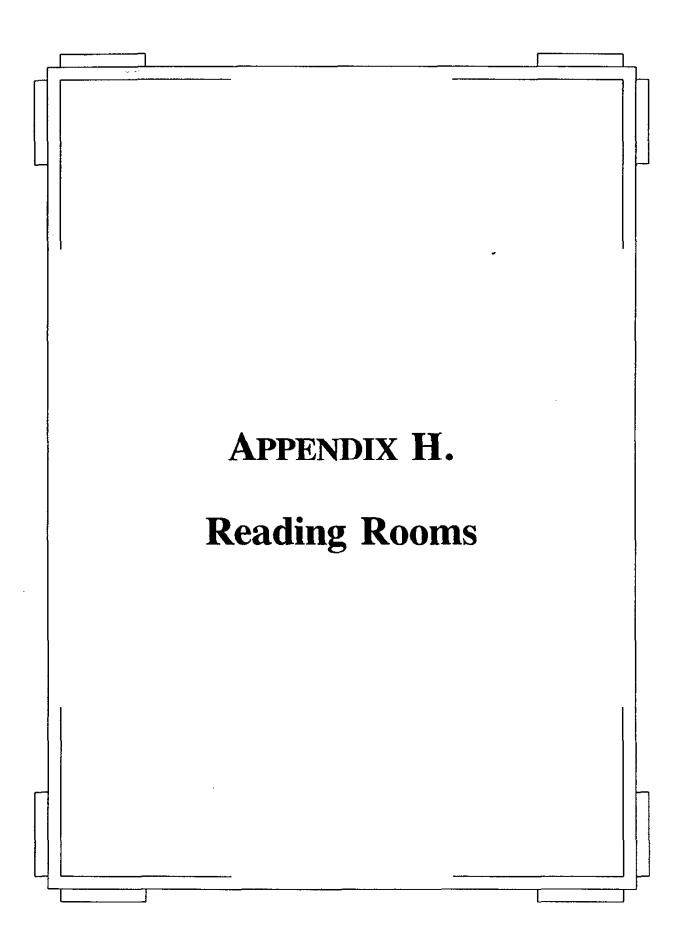
Table F-4. Results of field-measured data during first sampling round (2-3 April 1993).

Well/Sampling Location	Depth to Water (feet)	Groundwater elevation (feet)	Total Depth (feet)	Temper- ature (°C)	pН	Specific Conductance (µmho/cm)
MW-1	38.86	4236.88	46.28	16.5	6.4	600
MW-2	37.4	4239.79	44.9	18	6.3	3250
MW-3	26.8	4244.62	38.9	19	6.5	1550
MW-4	32.16	4241.34	44.9	16.9	6.5	850
MW-5	10.86	4248.59	NA	18.2	6.5	1200
MW-6	44.2	4235.44	51.8	19	6.5	800
MW-7	9.86	4249.36	17	21	6.5	1400
MW-8	14.58	4249.91	22.74	17	6.5	1290
MW-9	34.62	4249.04	46.74	22	6.5	1300
MW-10	46.32	4235.58	57.32	18	6.5	300
MW-11	35	4236.47	47.32	18	6.5	1000
MW-12	12.5	4249.05	20	17	6.7	1350
EW-1				18	6.5	1000
EW-3				18	6.5	340
EP-1				16.5	3.5	14800
CP-SB				26	6.8	1250
CP-WB				23	7	1290
CP-NB				24	7	1270
TR-B				9	7	105
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# APPENDIX G.

# LASH Analyses.

Information provided in this Appendix in the Draft EIS is now in section 4.3.2.3 of the Final EIS



## APPENDIX H: READING ROOMS

## H-0 Summary of Changes Since the DEIS

Additional documents submitted to the Reading Rooms have been included.

### **LOCATIONS**

Lyon County Fernley Branch Library P.O. Box 647 575 Silverlace Blvd. Fernley, NV 89408 702-575-2550 Freedom of Information
Public Reading Room 1E190
1000 Independence Ave., SW
Washington, DC 20585
202-586-6020

Washoe County Public Library Government Documents Section 301 South Center Street Reno, NV 89502 702-785-4190 Sierra Pacific Power Company 6100 Neil Rd. Reno, NV 89511 702-689-4011

Mr. Matt Marsteller - LIBRARY
Department of Energy
Morgantown Energy Technology Center
3610 Collins Ferry Road
P.O. Box 880
Morgantown, WV 26507-0880
304-291-4183

Storey County Library 95 South R Street Virginia City, NV 89440-0014 702-847-0956

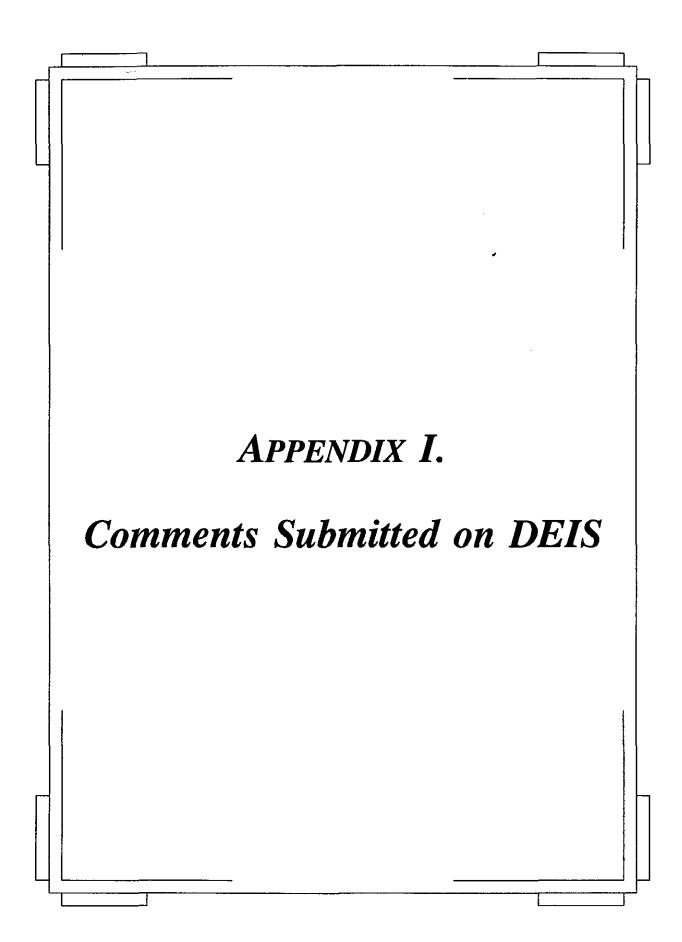
### **DOCUMENTS**

- Notice of Intent to Prepare an EIS and Conduct Public Scoping Meetings for the Proposed Piñon Pine Integrated Gasification Combined Cycle Power Project. *Federal Register* Vol. 57, No. 126, June 30, 1992.
- DOE (U.S. Department of Energy). 1992. Comprehensive Report to Congress Clean Coal Technology Program Piñon Pine IGCC Power Project. U.S. Department of Energy, Fossil Energy, Office of Clean Coal Technology, Washington, D.C. DOE/FE-0255P.
- Transcripts from the Scoping Meetings held on Tuesday, July 21; Wednesday, July 22; and Thursday, July 23, 1992.
- Implementation Plan for the Preparation of an Environmental Impact Statement for the Proposed Piñon Pine Integrated Coal Gasification Combined Cycle Power Project, prepared by United States Department of Energy, August 1993.
- SPPCo. 1993d. Final Environmental Information Volume (EIV) for Piñon Pine Power Project. March 1993. Sierra Pacific Power Company, Reno, NV.
- SPPCo. 1993h. Supplement to the Environmental Information Volume for Piñon Pine Power Project: Technology Description.
- Ebasco Environmental. 1993a. Piñon Pine Power Project Aesthetic Resources Report, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993b. Piñon Pine Power Project Geology, Soils and Seismicity Report, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993c. Piñon Pine Power Project Solid and Hazardous Waste and Hazardous Materials, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993d. Sierra Pacific Power Company Piñon Pine Health, Safety and Noise Report, prepared for Sierra Pacific Power Company.

- Ebasco Environmental. 1993e. Sierra Pacific Power Company Piñon Pine Power Project Historic Properties Inventory and Archaeological Site Evaluation, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993f. Sierra Pacific Power Company Piñon Pine Socioeconomic Report, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993g. Sierra Pacific Power Company Piñon Pine Air Quality Report, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993h. Sierra Pacific Power Company Piñon Pine Project Water Quality Report, prepared for Sierra Pacific Power Company.
- Ebasco Environmental. 1993i. Sierra Pacific Power Company Piñon Pine Power Project Biological Resources Report, prepared for Sierra Pacific Power Company.
- ENSR Consulting and Engineering. 1994. Fogging Potential for Piñon Pine Power Project, prepared for Sierra Pacific Power Company.
- Murray, Burns, and Kienlen. 1994. Biological Assessment for the Cui-ui (Chamistes cujus), Lahontan Cutthroat Trout (Oncorhynchus clarki henshawi), and Bald Eagle (Haliaeetus leucocephalus). Prepared for U.S. Department of Energy and Sierra Pacific Power Company. Sacramento, CA.
- SPPCo. 1993j. Application for Permit to Construct Piñon Pine Power Project, Tracy Station, Nevada, submitted to Nevada Division of Environmental Protection.
- SPPCo. 1994a. Application for Permit to Construct Piñon Pine Power Project, Tracy Station, Nevada, submitted to Nevada Division of Environmental Protection. (Revision 1)
- SPPCo. 1994b. Application for Permit to Construct Piñon Pine Power Project, Tracy Station, Nevada, submitted to Nevada Division of Environmental Protection. (Revision 2)
- SPPCo. 1994c. Application for Permit to Construct Piñon Pine Power Project, Tracy Station, Nevada, submitted to Nevada Division of Environmental Protection. (Revision 3)

SPPCo. 1994d. Application for Permit to Construct Piñon Pine Power Project, Tracy Station, Nevada, submitted to Nevada Division of Environmental Protection. (Revision 4)

DOE. 1994. Draft Environmental Impact Statement for the Proposed Piñon Pine Power Project, Tracy Station, Nevada.



# APPENDIX I: COMMENTS SUBMITTED ON DEIS

This appendix contains reproductions of comments on the Draft EIS as certified by court reporters at public hearings and submitted to DOE. Pertinent comments for which a response has been provided have been indicated by a number-letter designation. Responses are provided in Appendix J.

The following lists commenters by comment number.

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3	Carolyn Harry Tribal Secretary Pyramid Lake Paiute Indian Tribe	I-30
4	Monte Martin Environmental Director Pyramid Lake Paiute Indian Tribe	I-31
5	Mervin Wright, Jr. Water Resources Director Pyramid Lake Paiute Indian Tribe	I-44
6	Melissa Smith	I-53
7	Maurice Eben Pyramid Lake Paiute Indian Tribe	I-60
8	Robert Martinez	I-63
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31	Steven Alastuey Volunteer Citizens Alert	I-155	
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33	Steven Alastuey	I-161	
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36	Eugene M. Hattori Department of Museums, Library and Arts State Historic Preservation Office 6/7/94	I-167	
37	George Jackson Department of Conservation and Natural Resources Division of Water Resources 6/8/94	I-169	

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39	Cynthia Herman Department of Comprehensive Planning 6/23/94	I-173
40	Bill Hollis FOXX Systems Written Comment 7/1/94	I-175
41	John Williams Boilermakers Local Lodge #549 No Date	I-183
42	Barry W. Welch U.S. Department of the Interior Bureau of Indian Affairs 7/22/94	I-189
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44	David Farrel U.S. Environmental Protection Agency Office of Federal Activities 7/22/94	I-194
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49	Julie Butler Nevada Department of Administration	I-221
	Nevada State Clearinghouse 7/21/94 (Received after 7/23/94)	
50	David R. Cowperthwaite Department of Conservation and Natural Resources Division of Environmental Protection 6/27/94 (Received after 7/23/94)	I-223
51	Tim Carlson Commission on Economic Development 7/20/94 (Received after 7/23/94)	I-225
52	Eugene M. Hattori Department of Museums, Library and Arts State Historic Preservation Office 6/7/94 (Received after 7/23/94)	I-227
53	Sister Margaret McCarran no date (Received after 7/23/94)	I-229

The following is an alphabetical list of commenters, followed by their comment number(s).

Steven Alastuey	(31, 33)	George Jackson	(37)
Larry Beck	(47)	Alvin James	(17)
Brad Bryant	(26)	Albert John	(2, 13)
Julie Butler	(49)	Mark LeBlanc	(24)
Tim Carlson	(51)	Clare Mahannah	(46)
David R. Cowperthwaite	(50)	Monte Martin	(4, 11, 19)
M. Lee Dazey	(32, 48)	Robert Martinez	(8)
Mary Dodd	(14)	Sister Margaret McCarran	(53)
Maurice Eben	(7)	Kenny Miller	(16)
David Farrel	(44)	Melissa Smith	(6, 45)
George Foster	(21, 28)	Paul Stieger	(20)
Albert Franco	(35)	Sandra Theisen	(30, 34)
Carolyn Harry	(3, 10)	Peter S. Tuttus	(27)
Norman Harry	(1, 15)	Barry W. Welch	(42)
Eugene Hattori	(36, 52)	John Williams	(29, 38, 41)
Dean Haymore	(22)	Frank Winnemmucca	(9, 12)
Cynthia Herman	(39)	Mervin Wright	(5, 18)
Bill Hollis	(23, 25, 40)		

# UNITED STATES DEPARTMENT OF ENERGY PINON PINE POWER PROJECT

### PUBLIC HEARING

Tuesday, June 21, 1994

Pyramid Lake Paiute Indian Tribal Council Chambers Nixon, Nevada

REPORTED BY:

ERIC V. NELSON, CCR #57

ORIGINAL

SIERRA NEVADA REPORTERS (702) 329-6560

#### APPEARANCES

DEPARTMENT OF ENERGY

William Lawson - Moderator

PANEL MEMBERS:

Gary Friggens Suellen VanOoteghem

John Ganz Jim Johnson Jan Wachter

DEPARTMENT OF ENERGY PERSONNEL IN ATTENDANCE: Jerry Pell Dave Jewett Doug Jewell

FOR SIERRA PACIFIC POWER COMPANY:

Jack Motter Frank Luchetti

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NIXON, NEVAVA, TUESDAY, JUNE 21, 1994, 6:57 P.M.

-000-

MR. LAWSON: Thank you, sir. My name is Bill Lawson. I'm from the United States Department of Energy. I work at the Morgantown Energy Technology Center.

First let me thank you and the council for inviting us. And I'd like to -- it would help us a great deal in our process if we have this court recorder take an accurate transcript, if that's fine. And with that, we have a couple of brief presentations that we'd like to offer, and then solicit comments from the council and the Paiute Tribe and any others, if that's all right.

So, the reason that we have come here tonight is to consider a Draft Environmental Impact Statement on the proposed Pinon Pine Power Project at Sierra Pacific Power Company's Tracy Station here in Storey County.

My name is which Bill Lawson, as I said before. And I'm going to do the introductions for those of us from DOE here tonight and give you an overview of what we would like to get out of this meeting.

The purpose is to invite comments and questions on the Draft Environmental Impact Statement on this project from all interested parties. So a key part of this Draft Environmental Impact Statement and the National

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Environmental Policy Act process is getting public input into the process, and that's why we're here.

 So your comments are very important to us, and we would like to hear them.

Any comments that we get tonight will be considered and addressed in the final -- in the development of the Final Environmental Impact Statement. And then that Final Environmental Impact Statement will be used for developing a record of decision for the project, to decide if it goes forward or how it goes forward.

In addition to any verbal comments that we have here tonight, we are very pleased to receive any written comments on the Draft Environmental Impact Statement, but we need to receive them by July 23rd, 1994.

We have two brief presentations for you this evening, and first we'll have Gary Friggens from the Morgantown Energy Technology Center, U.S. Department of Energy, will give you an overview of the Pinon Pine Project and tell you a little bit about the Department of Energy's clean coal technology program.

And then Suellen VanOoteghem also from the Department of Energy in Morgantown will tell you briefly about the National Environmental Policy Act process, and then we'll be ready for the public portion of this meeting, public comment part.

First let me introduce in addition to myself, if you would stand when I call your name: Gary Friggens, and you'll see him; Suellen VanOoteghem, who came here to your council a couple of weeks ago; Jim Johnson, from Fossil Energy Headquarters; John Ganz, from the Morgantown Energy Technology Center; Jan Wachter, also from Morgantown Energy Technology Center; Dave Jewett, from Fossil Energy headquarters; Jerry Pell also from Fossil Energy headquarters; and Doug Jewell who currently is the project manager for the proposed Pinon Pine project from the Morgantown Energy Technology Center.

In addition, Keith Rawson, a gentleman who works with me, is here to observe and find out how we do this.

So with that I would like to introduce Gary Friggens, and Gary.

MR. FRIGGENS: Thank you. I'd like to use the viewgraph machine if I could. Can you see that from where you are sitting?

Since the Pinon Pine project is part of the clean coal technology program, I'd like to first just give you a brief understanding of what clean coal technology is. The clean coal technology program was mandated by Congress in the mid 1980's, and it is the Department of Energy's responsibility to carry out the program.

The purpose is to demonstrate innovative clean coal technologies for commercial applications, and when we talk about innovative clean coal technologies, we mean technologies that use coal to produce energy that are efficient, economic, and environmentally superior to conventional technology.

Our final objective is to demonstrate these technologies at a large scale in a commercial setting so that they ultimately, if they prove successful, could be commercialized across the country.

So the objectives of the program are to promote environmental protection, to enhance energy efficiency and reliability, and to provide opportunities for economic growth and employment.

The mechanism for doing projects in the program is by sharing in the cost of these projects. The Department of Energy is allowed by law to share up to 50 percent of a project cost. And therefore, the private sector, in this case Sierra Pacific, would be putting in the other 50 percent or more of the project.

In the program there are currently all together 45 projects, and they represent approximately almost seven billion dollars worth of these demonstration projects. The Congress has appropriated 2.7 billion of government funds for that purpose.

The program indeed is national in nature. The 45 projects are spread from Maine to Nevada and from Alaska to Florida, and we have made at DOE a concerted effort to insure that a variety of projects are located in western states.

The project that we're going to be talking about this evening is the Pinon Pine Power Project. It was selected by DOE for negotiation in 1991 under what we call Round IV of the clean coal program. The technology to be demonstrated uses an air blown fluidized-bed integrated gasification combined cycle. That is a big mouthful, but it's an efficient power generation technology that converts coal to gas first and then burns the gas in a combustion turbine. And then raises steam for use in a conventional steam turbine.

A significant feature of the process is in-bed desulfurization. Limestone is added to the bed to remove sulfur, and also most of the remaining sulfur is removed in an external step which we call regenerable hot gas desulfurization, and that uses a zinc-based sorbent.

Our partner in this project, and it really is Sierra Pacific's project, is Sierra Pacific Power Company.

The proposal is to build 104 megawatt, that is gross, coal-fired power generating facility at the existing Tracy Station, which is right on I-80 17 miles east of Reno.

It will produce on the order of 95 megawatts of electricity net.

The total project cost is \$270 million, and DOE is funding half of that or 135 million.

And again, the project objectives closely match those of the program, to demonstrate economic reductions in emissions of environmental pollutants, and to demonstrate long-term efficiency and reliability and maintainability, and environmental benefits of the IGCC technology, in a setting that is commercial, in a utility setting.

The process, very briefly, the gasifier is the heart of the process, and coal and limestone are crushed and injected into the gasifier, along with air and steam. And the gasifier is what we call a fluidized bed. It bubbles the coal. And the limestone, as I mentioned, takes out a good part of the sulfur content from the coal.

The coal is partially burned and then converted to a gas, and that gas can be burned as a fuel.

The solids that are left, the ash and the limestone that has absorbed the sulfur, become heavier, and exit out the bottom of the gasifier, and they are transported to what we call a sulfater, where they are oxidized in preparation for sending to a landfill or for using as a commercial byproduct.

The gas that's made then goes through a cyclone

to separate the dust which is returned to the gasifier, and then the gas is cooled before it goes into what we call the hot gas cleanup, which is to take out most of the remaining sulfur and particulates. And then, that gas is burned in a combustion turbine to produce electricity very efficiently.

The gas is still hot when it leaves the combustion turbine, and so it goes through a heat recovery steam generator to produce steam, which drives a steam turbine, and so we get electricity from both the gas turbine or combustion turbine and the steam turbine. And that's why we call it a combined cycle. It uses both a gas turbine and a steam turbine. It's a very efficient process.

Finally, this is just a chart of the existing Tracy Station, and the areas in red are those that would be newly constructed if the decision is made to proceed with the project following the NEPA process.

With regard to schedule, if indeed a positive decision is made with regard to the National Environmental Policy Act process, then construction would start in the time frame of the end of this year or the first of next year. Operation would begin in February of 1997 and would extend, as far as the Department of Energy's project is concerned, through August of 2000.

Of course, the Sierra Pacific Power Company would continue to operate the plant if it proved to be

successful for the projected lifetime of the plant, which I guess would be a total in excess of 25 years.

So with that, that ends the presentation I would like to make.

MR. LAWSON: Thank you, Gary.

Suellen VanOoteghem is the environmental project manager for this project. Suellen.

MS. VANOOTEGHEM: Thank you, Bill. Hello, everybody. Glad to be back here again.

And I'd like to tell you a little bit more about the NEPA process. I talked about it briefly the last time I was here, but I wanted to tell also the other people that may not be as familiar with it.

Basically, the NEPA process, National Environmental Policy Act, is a process, it is based on a federal law which became effective in January 1970. The goal is to promote better environmental planning and decision making to protect the environment. And it's required wherever there is a situation where federal monies, lands, and permits, and/or permits are required.

In this case, the proposed federal action is to build the power plant, as Gary already mentioned, and the no action alternative would be to not build the plant, which seems sort of obvious.

In terms of the kind of documentation that's

needed here, DOE determined that the greatest, most in-depth analysis would be done here. That is we would need to do an Environmental Impact Statement. And the DOE NEPA process for an Environmental Impact Statement is listed here, and we're at about the third step down right now. Following the public hearings there will be public comment period time, and then all of the comments that we receive will be addressed and identified in the Final Environmental Impact Statement.

So whatever comments you provide to us, you're going to see again, and you'll see our responses and how we answer these questions. We'll try and do as conscientious a job as possible.

Just briefly, as an overview, I'd like to discuss some of the major findings that we came up with here that the analysis provided, and that was that structures that are going to be built shouldn't alter the visual quality appreciably, that air emissions that are going to be expected during the operation of the plant would be sulfur dioxide, oxides of nitrogen, and carbon monoxide and particles.

But modeling results have shown that the concentrations would be in compliance with the National Ambient Air Quality Standards. I believe I was asked that during a couple weeks ago when I came and talked.

The national parks and forests in the vicinity should not be adversely affected, and any increments in air emissions due to the proposed plant should be very small in comparison to what the law would allow.

 With regard to the river, we expect that the river quality should not be impacted by the operation of this plant because the plant would continue to operate as a zero discharge plant or system.

Downstream users should be experiencing no more than 1.4, an estimated 1.4 CFS, cubic feet per second water loss, and it would be under very worst conditions, the most severe drought that we have had lately, it would be less than three percent.

The endangered Cui-ui sucker and the Lahontan cutthroat trout were two fish species that we spent a great deal of time addressing the needs of those species, and neither species is of course present in the vicinity of the proposed project.

And the proposed project surface water consumption would not be impacted, would not have an impact on the Cui-ui recovery plan because that is already in as part of the base for the Cui-ui recovery plan. We do not expect basically that there will be any real effect on either the Cui-ui, the Lahaton cutthroat trout or the bald eagle in the area of the proposed project.

Limestone ash, limestone/coal ash mixture, which is called LASH, would be a major solid waste, and there would be about 49,000 tons per year that are produced by this plant.

The location of the proposed project should not disturb any historical or archaeological sites. That's been analyzed for.

And the beneficial impact of increased tax revenue, that's going to be one socioeconomic benefit that should be positive, and that there is adequate labor and housing, et cetera, in the area.

There are a lot more conclusions, but these are some of the many or the main ones.

With regard to noise, there may be brief episodes where there will be steam blowing during the construction phase. And during that time if there are nearby residents they will be notified, and if they wish to move to another area during this expected event, Sierra will provide temporary relocation.

As I said earlier, there are more conclusions in this document, and you probably need to look at the document, if there is a specific issue you're interested in, that you haven't maybe heard yet.

The document will also discuss mitigation methods, both during the construction, visual and on site

impact, to name a few.

 The process is a rather long one. Here is where we were right now. Sometime ago the process started, around June 30th, 1992, when there was a notice of intent to prepare the Environmental Impact Statement.

Where we are right now is down here, the 21st through the 23rd. This is the first of three meetings to discuss or to solicit your input relative to the document, and then that document will end -- the process will end with a record of decision anticipated for around October '94. That will be based on this document and any additional comments that you have given us that we would analyze in the final document.

If you wish to comment in writing to me, please send your comments to me at this address. We need to have them by July 23rd so that we can be sure and incorporate them into the Final Environmental Impact Statement. This information is in the blue packets that you all have. So if you are looking for my address, it's there.

And finally, if you are looking for any of the documents that were some of our base documents in producing this Environmental Impact Statement, the place to look is in the libraries right here in town or right in the area.

There's one in Washoe County, Storey County and Lyon County.

We tried to make sure that it was as accessible

as possible to all of the people in the area. If you are looking for the documentation, that is where it is.

I guess that is about all I have to say except that we're anxious to hear your comments and your concerns relative to this project.

Bill, can you help us out?

MR. LAWSON: Thank you, Suellen.

At this time we'd like to begin the comment portion of the meeting, and first, I'd like to ask the Tribal Council if any of them has a statement they would care to make at this time, you would be more than welcome to.

MR. HARRY: Mr. Lawson, my name is Norman
Harry. I was wondering. You are talking about burning 800
ton of coal per day. Would there be a specific method of
transportation or transporting this coal? I'm sure it would
be the railways; right?

MR. FRIGGENS: Yes, that is right.

MR. HARRY: Was there any concerns addressing any type of spill? How would a spill, say the coal cars, affect the river or the water quality?

MR. LAWSON: Suellen.

MS. VANOOTEGHEM: Basically there haven't really -- there has been a brief analysis of that done, and what we have is a fairly good history which says that there

1-b

1-a

haven't been any degree of spills in the area.

MR. HARRY: There's always a potential.

MS. VANOOTEGHEM: There is a potential.

MR. HARRY: There is a possibility.

MS. VANOOTEGHEM: Yeah. In terms of the recorded time when they have been analyzing for it, one hasn't happened. So potential gets lower all the time.

MR. HARRY: I was wondering if there was any type of contingency plan to address such a spill or if it had any impact on water quality.

MR. LAWSON: Jan Wachter.

MR. WACHTER: I think Sierra would be required to do emergency preop preparedness plans to look at situations like that, whether it's a chemical spill response or coal spill response, something like that. That is geared more toward the containment of the event.

As opposed to I think what you are getting at, which is not included in the Draft Environmental Impact Statement, it is called like a what is analysis. What if there is a train wreck and the coal spills out. Typically that's not included in most environmental impact statements to cover everything. But I think certainly we could probably look at the emergency preparedness plans to say what happens if.

MR. LAWSON: Thank you, Mr. Harry. Do you have

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15 something else? MR. HARRY: I'm still thinking. MR. JOHN: I had one. Albert John. 2-a On solid waste, after it goes through this gasifier, where is that stuff taken or is it like a landfill, and what area around there? MR. LAWSON: Suellen. MS. VANOOTEGHEM: I am sorry, I didn't hear the comment. I am sorry. MR. LAWSON: The LASH, the 49,000 tons per year, what is the disposal method? Where does it go? MS. VANOOTEGHEM: It's going to go to the Lockwood Landfill, and it would take about two years off of the expected 200 plus, 212 year lifespan of that landfill. MR. JOHN: Is there any of this type of 2-ь operation in place now anywhere across in these other ones? MS. VANOOTEGHEM: Any IGCC's? MR. JOHN: Well, the combined. MS. VANOOTEGHEM: Yes. MR. JOHN: Where are they located at? 2-b (cont) MR. LAWSON: Gary Friggens. MR. FRIGGENS: There are none that would have the same type of limestone and ash mixture that you are referring to.

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I would like to mention that the landfill is an

option. Sierra Pacific I believe is also exploring commercial options for actually selling or disposing of the solid material as a usable product.

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 There have been studies that have shown that those kinds of products can be used for various types of applications, and I think those may be listed in the Draft EIS. But they are things like soil stabilization and concrete, material added to concrete and building materials and so on. But the landfill option is the option I think that is considered right now the one in the Draft Environmental Impact Statement.

Your question about other IGCC's. An IGCC plant at Daggett, California, called the Cool Water Plant, operated for several years in the 1980's, and there was a lot of information that came from that plant. Operated very well, incidentally.

But I would like to point out also that there are differences in technologies. So I don't want to mislead you into thinking that this is just a duplicate of the Cool Water process, for instance. But this technology has been operated for many years at a pilot plant scale in Pennsylvania, by Westinghouse and subsequently by a company called KRW Energy Systems. And so there is much information that was derived from that plant as well.

MR. JOHN: What are the dangers then if

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something went wrong with this? What type of dangers would there be, like an explosion or something like that within this gasifier?

MR. FRIGGENS: No. One thing about this gasifier is it is operated using air instead of oxygen. For instance, the Cool Water gasifier used oxygen, and this gasifier uses air. So the problems associated with oxygen are much less.

Offhand, I can't think of any concerns with regard to potential mishaps that you are talking about that aren't there in conventional coal-fired plants. Coal dust can be an explosive mixture if it's mixed in the right quantities. But those -- that kind of issue is dealt with all over the country all the time.

Did that answer your question, sir?

MR. JOHN: I had one more question. I'm not
too sure on that, those ponds they have over there, the
settling ponds. That is to cool the water; right? I mean,
to cool whatever the power they create; right? And they run
it down there just to cool stuff. And this one here doesn't
have anything to do with that then, drawing any water, or
does it?

MR. LAWSON: Suellen.

MR. WACHTER: Could you please restate the question? It is hard to hear back here.

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1	MS. VANOOTEGHEM: I am sorry.
2	MR. JOHN: You know the settling ponds that are
3	out there. How are they going to be used inside this
4	system, or are they?
5	MS. VANOOTEGHEM: The only function I think
6	you mean the cooling ponds, the ones that are up towards the
7	road?
8	MR. JOHN: Yeah.
9	MS. VANOOTEGHEM: The only thing that they
10	would be used for is to provide water in the case of a fire.
11	They are not going to be used in any other way. So there
12	shouldn't be any effect to water temperature there in the
13	cooling pond.
14	MR. WACHTER: For this project, I believe
15	Sierra would install a double line evaporation pond which
16	would more or less take the water, and there would be
17	evaporation of the water there.
18	MS. VANOOTEGHEM: That's for the water that was
19	actually used in the process area.
20	MR. FRIGGENS: Bill, could I go back and just
21	add a little something to the answer?
22	MR. LAWSON: Gary.
23	MR. FRIGGENS: I'd also like to point out that
24	there are five other IGCC projects in the clean coal

2-d (cont)

technology program that are planned to be built and

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operated. Each of them differs in technology to a degree that requires their own demonstration. But there are going to be in the next two years a couple of IGCC's that are starting up under the program which will be before this one.

There's also another plant operating at Plaquemine, Louisiana, which is a hundred megawatt, I believe -- well, it is not an IGCC; it's a gasification plant, but it is demonstrating again gasification technology.

MS. HARRY: My name is Carolyn Harry. I am the Tribal secretary.

You said each plant is uniquely different by a degree. What makes the Tracy Plant an ideal spot? Why has this been chosen as a site? Is there anything specific that is advantageous about locating it here?

MR. FRIGGENS: Under the clean coal technology program, the Department of Energy does not select sites. We did not go around the country and say, okay, we want to do a project at this site or this site.

What we did is we published what we called program opportunity notices, which is really a request for proposals, and over the course of the program some 200 proposals came in, and each of those were carefully evaluated for their merit against a number of criteria. And so part of the evaluation was to look at the site to make

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sure that it was an acceptable site. But we did not, as the Department of Energy, did not select that site by looking at a bunch of other sites.

MS. HARRY: I have another question. It is going to take 80 tons of coal to operate a day. That is what you would be burning a day?

MR. FRIGGENS: 800 tons.

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MS. HARRY: What is that equivalent to on a daily basis, what is that equivalent to in railroad cars or either trucks in transportation?

MR. FRIGGENS: I think a railroad car is probably close to -- not quite a hundred tons. Is that correct? So ballpark, that would be eight railroad cars.

MR. LAWSON: We had five people ask as they came in if they could speak tonight, and if it would be all right, maybe I can get their questions out of the way.

Monte Martin.

MR. MARTIN: I'm the environmental director here at Pyramid Lake, and I'd like to speak I guess officially first and then unofficially as a resident of a nearby community. We have quite a few concerns. I think one, you are talking about demonstration projects where the reliability is not proven.

As far as I have been able to determine, things that are called upsets, which means something doesn't go

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quite right, there is no protection. So during these upsets, you find that pollution increases drastically, magnitudes. So that was one concern.

My second concern is that machines are not a hundred percent efficient. When you are talking about 800 tons of material, you are talking about -- I don't know, what is the efficiency of this?

MR. LAWSON: Gary.

MR. FRIGGENS: Approximately overall, approximately 40 percent. Conventional coal-fired plant is 35 percent, talking about thermal efficiency.

MR. MARTIN: What is the efficiency of your particular emissions, your sulfur oxide?

MR. FRIGGENS: I am sorry, restate. The capture efficiency? I think it's roughly 98 percent or more.

MR. MARTIN: I don't know. If you did a real quick math on that, that comes out to about a ton a day of particulates.

MR. LAWSON: Well, one of the things you have to realize is when we burn the coal, most of it goes out as gas, and there's only a very, just a very few percent of the coal that actually comes out as particles, that is the ash that is in the coal. So it probably is a little less than that.

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MR. MARTIN: I'll use your figure.

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MR. FRIGGENS: The tons per day are listed in the Draft EIS, I believe.

MR. MARTIN: At any rate, assuming 135 tons is not overly optimistic. That's all going into the air. And you are talking about day after day after day after day, year after year after year.

MR. LAWSON: I believe there may be a misunderstanding there. It is not always 135 tons per day of particle emissions in the air.

MR. FRIGGENS: The 135 tons per day is the solids that come out the bottom of the gasifier and get landfilled or used commercially. That's not what escapes to the atmosphere.

MR. MARTIN: What does escape to the atmosphere?

MR. FRIGGENS: Do you recall?

MR. WACHTER: I don't have a number right in my head. It's in the EIS. But I think the sulfur capture efficiency of this plant is very high, in the order of 98 to 99 percent, as well as the particles emitted from the plant.

So in comparison to conventional power plants, this is much more environmentally acceptable for one to one comparability assessment. The numbers are in here, which I could talk to you after. But in comparison to other

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technologies like it, the emissions, the loadings are fairly small.

MR. MARTIN: Okay. I would accept that the loadings are less. But the whole point of the matter is you are still talking about tons of material. You are talking about tons of particulates. You are talking about tons of sulfur oxides. And you are talking about accumulation of these.

I mean, the air blows it away, a lot of it settles down, settles into the river, settles other places.

MR. JEWETT: I am Dave Jewett for Headquarters.

You mentioned 135 tons. That is of particles. That is right. It is 135 tons per year, not per day.

MR. MARTIN: Okay. All right. 135 tons per year. If you were to take and put a ton of dust into this room, what do you think it would be like?

MR. JEWETT: Of course, it is not going to be in this room. It is going to be scattered all over the United States.

MR. MARTIN: Of course, that is an assumption that was made. At any rate, going on, we're concerned about your modeling that it's not site specific and doesn't take into account some Northern Nevada and some topography features. I didn't see anything that did.

4-c (cont)

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For instance, we have lots of inversions, 150, 200 of them a year. The inversions can sometimes be very shallow, 600 feet. So instead of the particulates going up, mixing all over, spreading out and distributing, they don't. They go up, they hit, and looks like a mushroom cloud.

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I know, I watch one from Nevada Cement do that all the time. So we're concerned about that. We're concerned about stagnant air masses. Northern Nevada has the second all time world for stagnant air mass. I didn't see that addressed.

MR. LAWSON: Excuse me. Jan.

MR. WACHTER: Monte, I gather your question is whether or not we used as conservative a model as we possibly could to predict the effects; correct?

MR. MARTIN: I'm questioning what you put into the model.

MR. WACHTER: But if we generated the numbers using the most conservative model that we could, which takes into account inversions, stagnations, lapse rates which are inverted, things like that, and looking at the terrain here in terms of whether or not there is any hills which are above the stack height or below the stack height, that would address your concerns.

MR. MARTIN: There is hills on both sides, in addition.

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 MR. WACHTER: But those are the things you are looking at; right?

MR. MARTIN: Those are the things basically I am looking at. So what we see is that there is a lot of meteorology factors, and there is the funneling factor, you might say, with the mountains and things. And we want to make sure those things are considered because they can have an impact far far away.

I mean, you can magnify the effect. If you look at the map, it looks like the plant is a long way away from Wadsworth and Fernley, but in reality, if you have all these other things and if you have a mountain range trapping it in the sides, you are not talking about that much air to serve as your dispersant.

And furthermore, this is a cumulative thing year after year after year after year after year. Basically the areas of Wadsworth and Fernley are already highly impacted by a coal burning facility, Nevada Cement. They really can't afford another big volume impact.

MR. LAWSON: Were the cumulative effects looked at?

MS. VANOOTEGHEM: I believe they were, yes.

MR. WACHTER: We will have to determine and we can probably add paragraphs into the EIS looking into whether or not the air around Wadsworth is what's called in

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nonattainment to the national ambient air quality standards and do sort of a cumulative analysis based on the effect on that. You probably don't have much data itself other than this national ambient air quality designation in order to help us out on this type of thing.

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about a basin.

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MR. MARTIN: I doubt that the data would be available very readily.

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MR. WACHTER: I think on a state level, I think there is a possibility.

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MR. MARTIN: The state in my opinion makes a conscious effort not to monitor out there. And I said that is my opinion.

MR. WACHTER: We will check that.

MR. MARTIN: At any rate, there is a concern.

I think there is quite a few people who have respiratory distress already, and a coal burning facility, from what I saw, burning coal, even a clean one, there's no such thing as clean coal. There's clean air but no such thing as clean coal.

Coal contains trace amounts of heavy metals, zinc, mercury, antimony, chromium, beryllium, lead. In theory those things get disbursed. In reality we're talking

You can look over there on the map and you can see, there's almost no way that much of that stuff isn't

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going to end up in Pyramid Lake one way or another. Either the air is going to put it there or it's going to settle down, and you are going to have the particulates and things washed into the river. I haven't seen that covered either.

MR. WACHTER: There is a section in the EIS which looks into I believe it's called Title III of the Clean Air Act Amendments of 1990, and our basic conclusion was on a tons per year basis, the trace elements like mercury, lead, are so low coming from this plant that the law requires no further analysis of the impacts from the project because they are so low. Even if there is a concentration effect, they would still even be a lot lower than the threshold to start putting controls or looking at the effects. But we'll look into that, if that is a concern.

MR. MARTIN: How about the threshold levels as things go up? For instance, mercury concentrates by a factor of about 10.

MR. WACHTER: Right. In establishing these limits, the Environmental Protection Agency looked into those threshold limits with respect to what you have to start looking at because of these bio concentration effects. In particular, the mercury, in fact I believe there has just been passed in the last five or six months a new mercury standard based on health risk analysis, and this plant is

far	below	that	threshold	even.	But	we	will	look	into	it
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MR. MARTIN: And it's the multi year thing. I mean, one year, two years, three years. I mean, you are talking about a big expensive plant that is going to be there 30, 40. You are not talking about something that's going to be gone tomorrow if we find out there is a problem.

I was wondering also if you have really looked at the temperature. I studied your EIS some. And as far as I can see, there wasn't a specific study per se made to determine if you were going to raise the temperature of the Truckee.

MS. VANOOTEGHEM: In this case I guess I'm trying to figure out how we could, because there's no point discharges and the cooling water doesn't go to the pond.

MR. MARTIN: There is no such thing as a zero discharge, with all due respect.

MS. VANOOTEGHEM: I understand. However, there are no discharges to the cooling pond, which is near the Truckee River. The discharges of warmer water would be either to the cooling tower or to the evap pond.

MR. MARTIN: Okay. You look and there are ponds all over the place around there.

MS. VANOOTEGHEM: The evaporation pond is a double lined pond.

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 MR. MARTIN: There is one that is double lined. Are they both double lined?

MS. VANOOTEGHEM: That is the only one that would be used. So we are very conscious of this and making every effort to try and make sure that there is no changes in the Truckee River.

MR. MARTIN: Okay. The next thing I think has to do with the fact that Pyramid Lake is, if you look at area wise, there's not too far a distance, and the lake depends upon recreation and sports livelihood, it depends upon having clear skies and nice beaches and things like that. And I don't know. I mean, how many of these tons of particulates that are going to be released are going to be floating that way?

MS. VANOOTEGHEM: I think that's a good question, and we will certainly look into the issue.

MR. MARTIN: Basically I guess we could say that the tribe doesn't want a black haze and particulates over the lake.

MS. VANOOTEGHEM: Understand. I wouldn't either if it were my lake.

MR. MARTIN: I guess the other thing I wanted to say is as I studied the Environmental Impact Statement, it basically said there are better places to put it, if you are looking at the environment and things like that. If you

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are not using economics as your sole consideration, there are better places to put the project than where it is.

MS. VANOOTEGHEM: In terms of where we place the project, though, we need to be sure that it's where the industrial participant would want that project to be placed. They also have a certain input there. We can't just arbitrarily as the Department of Energy come in and say, well, you are going to put it over here because we said. We have another group of people involved in this.

MR. MARTIN: You have 135 million --

MS. VANOOTEGHEM: Absolutely.

MR. MARTIN: -- dollars on where it goes, and the North Valmy was environmentally a much better and is a much more isolated area, with much less chance of having any environmental particulate.

MS. VANOOTEGHEM: Environmental Impact does have to include socioeconomic impacts, though. That is part of the process.

MR. LAWSON: Gary, would you address this issue again? I thought you did it. But would you say again what the government's role and responsibility is in these projects, just so that it is very clear?

MR. FRIGGENS: We are not able to select optional sites for a project. In other words, a project is proposed to us as the Department of Energy by a proposer,

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and it's proposed for a given site that that proposer selects.

What we must do is to analyze that site through the NEPA process, which is what this is all, about, to see if -- to determine what potential impacts exist and how, of what magnitude they would be. But as the program was shaped by Congress and by the Department of Energy and the rules that we must play under, we are not at liberty to say that project has to be moved to another place. All we can do is say yes or no to whatever project is proposed to us at whatever site.

MR. MARTIN: The other was basically a better considered site, though, wasn't it?

MR. FRIGGENS: It was not proposed to us.

MR. MARTIN: It is just mentioned in the EIS.

MR. FRIGGENS: It was considered by Sierra Pacific prior to their proposal to us.

MR. LAWSON: Jim Johnson.

MR. JOHNSON: The only thing I want to add is that the environmental factor is not the only consideration for selecting a project. I think for a company you have to look at both the economic part of it too and the technical that goes along with the environmental, and all that goes into the system as to whether to go forward with the project or not. The environment is just one.

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If you look at some of the other factors that are spelled out in the EIS, like the distances from transmission lines, the distances from railroad lines that we have to take coal on, some of those are some of the other factors that went into the consideration for proposing the Tracy site as opposed to the North Valmy, for example.

MR. MARTIN: I read those others, and it seemed to me the basic one seemed to be the fact they didn't want to increase the staff by 50 percent there, and they didn't want to put in propane as an alternate.

MR. JOHNSON: The staffing was one consideration that would reduce the cost. But I think there were others also.

MR. MARTIN: And they didn't want to build another control tower.

The final thing I guess I can say is that the tribe are semi-dependent nations, and they have a right to set air quality standards, which would apply on the reservation. Indirectly they would apply elsewhere. And if they get pushed to the wall, get surrounded by a bunch of coal burning facilities, I imagine they will have to do something about that. And other places would have to consider that with the permitting and things like that.

I mean, I know the tribe cannot directly

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regulate this. But air and water and things like this flow, and so I think the government should try to consider that and not push people into having to regulate the standards, particularly in view of the fact the State of Nevada is undergoing a real problem of one of the laws that was put through in the last legislature forbid the State of Nevada from setting any standard more strict pollutionwise than federal minimum. In spite of the fact that there are big differences, and that is not the intent of the federal law. Fortuately, the Governor vetoed it.

But that's -- those are problems that need to be looked at and considered. Thank you.

MR. LAWSON: Thank you.

Mervin Wright.

MR. WRIGHT: My name is Mervin Wright. I am the water resources director for the tribe.

My main concern at least with the Department is we deal with the water rights for the tribe and for the region. And I have also written, I have a written statement also that I handed to you, and I do have some additional questions as I sat here and listened to the presentation.

But I wanted to know, what is the present discharge at the Tracy Clark Station?

MS. VANOOTEGHEM: Present discharge of water to the Truckee?

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MR. WRIGHT: Yes.

 MS. VANOOTEGHEM: Is that what you are asking? At this point it is zero discharge. There is no point discharge to the Truckee River.

MR. WACHTER: However, that needs to be clarified a bit because they do have cooling ponds there, and there is infiltration from the cooling pond through the soil, a recharge rate to the river. That information is contained in the Draft EIS. The numbers, I can't recall that.

MR. WRIGHT: There is an amount that recharges into the river.

MR. WACHTER: The cooling station actually probably contributes some of the water back into the Truckee River through the recharge rate. But the proposed project would generally be called a no discharge sort of project because of the nature of the evaporation ponds which would be built.

MR. WRIGHT: But you are also going to have nonpoint source; right, as a recharge?

MR. WACHTER: You could probably have area sources like if there is a storm coming in and there might be coal dust on the ground and stuff like that. But we analyzed that in the draft.

MS. VANOOTEGHEM: That all goes to the cooling

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35 1 pond. MR. WACHTER: It will be contained. 2 MR. WRIGHT: I don't know if any of the Sierra 3 5-b 4 Pacific Power people are here tonight, but did they have an alternate site and why was the Tracy Clark Station chosen as 5 the first choice? 6 MR. FRIGGENS: I think that was -- we tried to 7 define that in the EIS. 8 MR. WRIGHT: But you didn't? You said you 9 5-b (cont) tried to define it? 10 MR. FRIGGENS: I think there is a table in 11 there that explains the numerical process that Sierra 12 Pacific used in evaluating various aspects of each site. 13 MR. WRIGHT: So it is pretty much driven on 14 5-b (cont) economics then. 15 MR. MOTTER: I am Jack Motter from Sierra 16 17 Pacific Power Company. A summary of the process that was used in 18 19 selection of the site is outlined in the Draft EIS. It's contained in more detail in the detailed technical volumes 20 21 that support that. 22 Basically what we did is when we went to look for a site, we looked throughout on our entire service 23 24 territory and consequently looked at both the existing power 25 generation stations, such as Fort Churchill, Valmy, Tracy,

we also looked at green field sites in areas of load growth, and considering a wide range of factors, including the various parts of the environment, air quality, water quality, cultural resources, socioeconomics, as well as cost.

A lot of times a cost item will actually drive other environmental impacts. Were we to say let's go find a place somewhere in the middle of nowhere and build a plant there. Now we would need to build a natural gas pipeline there, additional roads, likely housing, railroad would have to be extended to that area. Each one of these drive it.

Similarly, when we looked at sites we also looked at socioeconomic impacts on surrounding communities. We might have evaluated, for instance, one, the effects of a construction work force of 300, 350 on a small town like Yerington for a two or three year period. That would be less desirable in terms of socioeconomics than siting it closer to Reno, for instance, where the metropolitan area can absorb that sort of work force, minimizes the amount of transportation on a daily basis.

So we considered a broad variety of generation, potential generation sites at both existing stations as well as what we call green field sites where there is not now a power plant.

Our assessment was that the Tracy for a variety

 of reasons was in fact the very best site, and as we went through the design, we have been very sensitive to trying to do things in an environmentally responsible manner from the ground up in the design of this project. So that's a summary of the mechanism that we used in the site selection process.

MR. WRIGHT: Just listening to the presentation, when the question was asked about that, I thought I would follow through with that.

MR. MOTTER: Does that help?

MR. WRIGHT: Yeah. I only looked at the water resources parts of the EIS.

As far as the water rights are concerned, I guess this Pinon Pine Power Plant will be exercising the 1961 and 1974 water rights of the power plant, the present Tracy Clark Station? That's a very junior right compared to other water right holders in this river basin.

So what's going to happen? As we all know, this is probably going to be a repeat of 1992 when there's only maybe 30 second feet in the river. What's going to happen if we are going to experience this in the future if this plant goes through?

I mean, I just throw the question out because it is a concern that we have. When it comes to Sierra Pacific's water rights, they have the first right to divert

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the 40 second feet at Verdi, and there have been times in 1992 when there's no water in the river in Reno, stretches of the river. We're subject to those return flows. So I'm asking, are we going to be subject to the points of diversion at Tracy Clark Station after, as this pilot project is in place?

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MR. MOTTER: Again I think since you are more or less directing that question to me, what I'd suggest is that two things. First of all, the water rights, and we have some water rights experts who could probably talk in more detail to this, and I think this is appropriate to be addressed in detail in the Draft or in the Final EIS, but the water rights involved are Orr Ditch decree rights which are actually fairly senior rights.

When I heard the subsequent data, I was thinking the proposed settlement on the Truckee River agreement, and those water rights from the Orr Ditch decree which are in fact the rights that are being used at the station have been fully addressed in the Cui-ui preop recovery plan.

Good issue. Needs to be addressed in the EIS.

MS. VANOOTEGHEM: I think those are actually listed, the rights to be exercised, and they are listed as Orr Ditch in the documents.

MR. WRIGHT: Follow up to that, what is the

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out-take? What type of out-take do you have in the river?

Is it a pipe, is it a ditch, is it a flume? What is it that you have at Tracy Clark that takes the water from the river?

MR. MOTTER: It will just use the existing

diversion point right now.

MR. WRIGHT: Is that a ditch or a pipe?

MR. MOTTER: No, sir. It is actually a low
point in the river that comes into a small holding pond.

That is screened from the river to prevent any intake of
fish with a low volume screen. From there it goes by pumps
into the station.

MR. WRIGHT: Okay. Monte talked quite a bit about the emissions from the stacks, and as we now understand it, it is going to be tons that is going to be released from the stack, not small amounts. You are talking about 800 tons a day. So one percent of that is eight tons.

If we are talking a small percentage, as an example, one percent, it could even be less than that, but we're talking about tons. Now wind generally blows east through that corridor. And during times at least in this region, we experience more of cloud bursts, downpours instead of a steady rain. So in those times when we have those downpours and those cloud bursts, you are going to get a lot of runoff into the river.

So it's our concern here that I don't think it

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was addressed in the EIS about the possibility of those things happening. And even though it can get -- it's going to have to be addressed and it probably will be. It is kind of a relation to what the environmental director had addressed. So I just wanted to bring that point up.

MR. LAWSON: Could I take a shot at this, Jack, and you can correct me if I am wrong? What we're talking about in terms of ash and coal of the 800 tons is how many percent, Jack? What is the ash content?

MR. MOTTER: Several percent.

MR. LAWSON: Five percent.

MR. MOTTER: Yes.

 MR. LAWSON: Probably five percent. Of that five percent that goes into the process, most of it does not come out in terms of air emissions. About 98 percent of that is removed; is that correct? Something on that order, even 95 percent.

So it's 95 percent of five percent is pretty much taken out. So you have 95 percent of five percent.

It's much less than a percent of the coal that goes in is going to come out the stack.

One of the features of this particular technology is that gas that comes out of the gasifier has to be cleaned to pretty high standards before it's burned and run through the gas turbine. The gas turbine tolerance for

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particles in that gas which eventually end up going out into the atmosphere is not very good. It won't last. And probably at least comparable to, even more severe than the current federal law calls for.

MR. WRIGHT: Also kind of as a follow-up to some of the concerns that the environmental director presented was the mercury, and we know that what it does to aquatic life, it does to the environment, is not good. The Carson River is experiencing a serious problem with mercury. Look what it's done to Lahanton Reservoir.

So we're even experiencing these little clams that are only present in polluted waters. They are all up and down this whole river. Wherever you go you find them.

So whatever is being put into the water affects us here. So anything that is in the water is going to be in Pyramid Lake.

And we do not want to see the big industries coming in and destroying a very valuable resource such as Pyramid Lake and a very valuable fishery. And for the people who consume the fish, not only tribal members but those sport fishermen and visitors that come in, they are going to have to deal with it also.

That's why it is real important that we don't have a big industry come in and just destroy this whole valley as we see the cement plant down there. It gets up

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this way. This whole valley, you can't even see past here.

So that is pretty much all I wanted to present tonight, and I probably will add some comments by the deadline. I'm sure that Monte and I, and probably the chairman, maybe some of the council people, will get together and discuss this EIS at a little bit more length so that we can probably come to more conclusion on what our concerns are.

MR. LAWSON: Thank you very much. And you have raised very good issues, obviously.

Melissa Smith.

MS. SMITH: I didn't get a chance to read the EIS. For some reason I wasn't on the mailing list. But I do have some questions.

Monte, what you just said about the air quality and the wind going east for the most part, well, that's where I live. I live by the Lahontan Dam area. That is my concern is the air quality, what is it going to do to that recreation area. I don't know if it is addressed in here or not. I have only had a brief time to look at the book.

MR. LAWSON: Do you know if that was addressed?

MS. VANOOTEGHEM: Pardon?

MS. SMITH: The Lahontan Dam area.

MR. LAWSON: the Lahontan Dam area, was that addressed in terms of air quality impact?

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MS. VANCOTEGHEM: The whole area was addressed,
and the effect in the radius around the plant was addressed.
MS. SMITH: What mile radius was addressed?
MS. VANOOTEGHEM: It was addressed out to the
point where there was no longer any significant impact based
on EPA standards.
MR. WACHTER: I believe the maximum was 5.9
miles was the radius.
MS. VANOOTEGHEM: Melissa, also, I don't know
if we have your correct address, but in terms of if you look
on page 13-6, your name is on this document. I don't know
how it is that you didn't get the document. Would you
please check and make sure we have your correct address?
MR. MARTIN; Did I understand you to say that
you addressed it for five miles and that was it?
MS. VANOOTEGHEM: No, no, no.
MR. WACHTER: Actually the way we performed the
analysis, there is a variety of threshold limits which we
ascertain from the Environmental Protection Agency, and we
do the analysis, and there is things called class one area

And what we do is sort of a tiered analysis. And if something does not have an effect for these

and class two area. This area is basically a class two

area. The closest class one area is the Desolation

Wilderness area to the west here.

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significance levels -- and you have to realize that these levels are lower than what's permissible for like national parks, and very pristine air types of areas -- if the numbers show that it's lower than that limit, we typically do not do any more analysis unless it's in the class one area, and maybe the national parks request something in addition to it.

And based on this analysis the effect area for the plant is 5.9 miles, for one pollutant. I believe it's for SO2 or NOX or something like that. It is in the report here.

 $\ensuremath{\mathtt{MS.}}$  VANOOTEGHEM: That is the greatest distance.

MR. WACHTER: That is the greatest. Then what we do say, if it is an exceedance to this very low limit we do a second tier of analysis using a certain type of model in order to get the concentrations to see whether or not it meets sort of the class two standards for the area, and when we indicate that okay, it meets 20 percent of the maximum allowable, we ascertain okay, that's the result, 20 percent. It's for us to say now whether or not that is a significant effect or not with relationship to what's the use of the air, what's in it, if there are sensitive receptors there. We do sort of a tiered analysis which is presented in here.

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Now the cases, if you live 10 miles outside

this five mile radius, then you will have less an effect
because you are further away. We can't do every receptor
around. So we do this tiered approach. But we did an
analysis for the class two area around here as well as the
class one Desolation Wilderness area, and that is in this
EIS.

MS. SMITH: Well, I hope to get a chance to look through it. My other question was: Does anybody have an address for the place in Louisiana?

MR. FRIGGENS: Plaquemine.

MS. SMITH: Is there any way that we can get comments? That plant is up and running now?

MR. FRIGGENS: Yes.

MS. SMITH: Is there any way that we can get an address to ask how they are doing?

MR. FRIGGENS: Sure. We can provide you with that. We don't have it here. But we'd be happy to give you a contact person. Again, recognize that that is not an identical technology to this, but it is an IGCC technology.

MS. VANOOTEGHEM: It is part of that technology.

MS. SMITH: It's close.

MR. FRIGGENS: Yeah. It's a different type of gasifier. But the principle and the overall -- the technology is the same of gasifying coal and so on. So

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sure, we'd be happy to provide you with a contact point.

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MS. SMITH: The councilman, he raised some what if questions, and I'd also like to put that out, too. What if questions can involve what if an earthquake hits. Some people say there is going to be a big one, it's going to hit the Reno-Sparks area. I did notice there is a small section in here for earthquakes. What if questions are important because we do need to be prepared.

MS. VANOOTEGHEM: In this case, what if has been addressed by saying that we're going to build this plant with the maximum ability to withstand an earthquake. It is built to the highest standards to withstand a maximum magnitude.

MR. SMITH: Suellen, what would be the maximum?

MR. WACHTER: In the analysis of this report I believe it is a 7.1.

MS. VANOOTEGHEM: So I mean, the attempt was made to make sure.

MR. WACHTER: But also contained in here we have provisions of what ifs saying okay, if the structure is whole, maybe the containment evaporation ponds may not hold, and there is some analysis of that in there.

In terms of what if, we have done sort of like a tiered approach again in trying to address those what if questions which are the most likely to occur, the

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probability is, I'm not going to say high, but it is a probability, and the impact of that probability will have an impact which you can really measure. And those are the two criteria we actually use in order to determine which what if issues would be included in this Draft EIS.

MS. SMITH: I'll look further. But another what if question is again the coal spills. Nobody expected that train to derail and to dump all those fertilizers and stuff into the California river.

Another what if. What if something happens to the railroad and the coal does dump into the river? It goes right along the river for many many miles, and it could be not only a load of coal to go to Tracy Clark, it could be a load of coal going to California. They frequently pass by there. What if, is there going to be a special hazardous waste team?

MS. VANOOTEGHEM: That's certainly something, and you have got two overlapping things here. This would be addressed in the EIS for sure. And to answer the question in the one you brought up earlier, it will be addressed.

The thing to realize here is that this EIS is not for building a whole world into a safe world either. So there is going to be some things that are a little bit outside of our control. We don't control the fertilizer either.

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MS. SMITH: Oh, no.

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MR. WACHTER: But typically -- I don't want to get into the methodology a lot -- but we typically frame the what ifs within the legal regulatory environment. For instance, the emergency preparedness community right to know act, which you have to inform people the chemicals which are on the site and how you detain them. There are contingency plans for how you store hazardous waste on site and what ifs if there is a spill and things like that.

In terms of those sorts of analysis, which are well defined regulatory guidelines that we can go and ascertain compliance with regulatory requirements, we typically do that, and we will look into the coal spillage issue.

MS. SMITH: Now you are going to be bringing sulfur in by train, too, or is that going to be by truck?

MR. WACHTER: Sulfur? There is no sulfur.

MS. SMITH: Or lime.

MR. WACHTER: Limestone.

MR. FRIGGENS: By truck.

MS. SMITH: That will be by truck?

MR. WACHTER: That would be an enclosed truck.

Totally enclosed.

MS. SMITH: I think that's all I have until I finish reading. Thank you.

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MR. LAWSON: Thank you.

Maurice Eben; is that correct?

MR. EBEN: Eben.

MR. LAWSON: Excuse me, sir.

MR. EBEN: My name is Maurice Eben. I am a tribal member, and I'm currently working with the Numaga Senior Citizen Program. We have been involved with the ethnic history and archaeological studies on the Tuscarora Pipeline, and just recently the Tribal Council appointed the Numaga Senior Citizen Program to deal with the cultural preservation, repatriation and so on.

We have four concerns. They don't need to be answered because I don't think it will be answered in a forum like this. I don't think this is the appropriate place.

What environmental hazards does such plant pose for tribal communities? In listening to everybody talk, there isn't an answer. No matter how much clean air we want, and no matter how many reports and statistics you guys want to expound on, we're not getting the answer.

There is going to be a definite reaction to building that plant. And we'd like to know just what hazards. Not what you are trying to prevent but what kind of hazards can actually happen from what's going to be put out.

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The second one is: Will the Environmental Impact Statement include a study of the downward particulates and their effects on the air quality of the communities of Wadsworth, Nixon and Suttcliff?

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The third is: What effects will the downward particulates have on our agricultural land and the water quality downstream from a coal-fired plant?

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And the last one is: Will the tribe have an active role in participating with the EIS archaeological and history reports?

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The last one is probably more of what the elder program does since they have participated with the Tuscarora Cultural Research Group. We have taken field trips and we have been able to develop a pretty comprehensive concern on that.

Also the elder program, the people enjoyed the respect that was given to them by asking what their concern was and allowing them to go out on to the route and actually take a physical look. I haven't gotten a chance to look at the portion of the EIS yet, but you know, there is a variety of groups on the reservation, not just the tribal government, that would need to get these reports in order to have a concern.

MS. VANOOTEGHEM: We would be delighted to provide these reports to anybody that needs them, and if you

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1	need more, I can ship them to you yesterday already.
2	MR. EBEN: I think that would suffice because
3	once Mervin gets them, he knows the other people that are
4	involved.
5	MS. VANOOTEGHEM: Maybe he can give me some
6	clue as to how many he would like.
7	MR. EBEN: You know, before it's all done, I
8	realize it is a draft, but whoever your archeologist was
9	should give us a call.
10	MS. VANOOTEGHEM: We will do that.
11	MR. EBEN: Because we know those areas from
12	just eyeballing the map that you put up on the screen, there
13	is habitation sites on that side of the river and then on
14	the other side of the river also.
15	MS. VANOOTEGHEM: What we did is there is an
16	archaeological report that you can find actually in one of
17	those three readings rooms. There is a report right there.
18	And if you require more information
19	MR. LAWSON: Could we not send one?
20	MS. VANOOTEGHEM: We would be delighted to send
21	you one.
22	MR. EBEN: Isn't that supposed to be part of
23	the EIS now?
24	MS. VANOOTEGHEM: It is part of the EIS in the

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sense that it's a document in the reading room, and there is

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a letter from the historic preservation officer that is a part of this document indicating that they had reviewed the results of the archaeological study. So we're pretty confident that we would not impinge on anything that would be --

MR. EBEN: Well, I think that would determine on what the tribal people have to say, not what the archaeologists have to say, considering the archeologist isn't a member, and we have people alive right now that know those sites.

MS. VANOOTEGHEM: We would be delighted to provide you with what we have.

MR. EBEN: Thank you.

MR. LAWSON: Thank you.

Robert Martinez.

MR. MARTINEZ: My name is Robert Martinez, and I'm just a concerned citizen. I have some questions on the air quality monitors.

You stated that you start monitoring in '93, and the location of the monitor is east of the Tracy Power Plant. Is that going to be the only monitor for the whole project?

MS. VANOOTEGHEM: I think that really -MR. MARTINEZ: Just one, because that is all
that exists out at Valmy is one for the whole area. The

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 topography is Valmy is quite different versus the river area and versus the Virginia range where the Tracy Power Plant is.

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MR. MOTTER: I might just mention, in addition to the air quality monitor at the site, there is also seven air quality monitors which continuously monitor emissions all the time from every one of these seven generation units that will be at the site. So in addition to that one air quality monitor, there are a number of other continuous emissions monitors which are collecting that data.

MR. LAWSON: The locations would be something of interest to you, I'm sure, and we know that now. But that's a good question.

MR. MARTINEZ: Because the monitor, you talked about the stacks themselves.

MR. MOTTER: Within stacks, yes.

MR. MARTINEZ: That's fine. But what about out in the air, and also I see you are monitoring, you are getting the existing effects, and then in the Draft EIS, they address the cumulative effects of the proposed project in addition to what exists?

MR. WACHTER: Yes. Can I answer that? There is a section of the EIS which looks into the contribution of the proposed Pinon Plant, Pinon Pine Power Plant's emissions on the existing base line.

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MR. MARTINEZ: I have that right here.

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MR. WACHTER: That existing base line incorporates what is around and in this area. So if you look at those numbers, that probably gives you the answer.

MR. MARTINEZ: Okay.

MR. LAWSON: Did you have any more information on environmental monitors?

MR. LUCHETTI: Yes, I did. My name is Frank Luchetti. And I'm the environmental director at Sierra Pacific.

There are in fact three monitors at Valmy, and the monitors are actually set within our operating permit that is issued to us by the State of Nevada. One of those monitors is in the south end of the valley, and the other monitor is in the north end near Battle Mountain.

The way that those monitors are picked is we talked a lot about wind directions. When you do your modeling for your facility, you actually describe your maximum impact, at what point, at what mountain range is your maximum impact. That does set where those monitors are located. We haven't gone through that process yet in the State of Nevada, but we expect there will be some additional monitoring that will be required.

MR. MARTINEZ: Okay. And then on your emissions, the sulfur and stuff, it is going to be like 200

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expect.

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pounds a day is what is going to be the exhaust from the stacks. Is that what is going to go into the air, based on micrograms?

MS. VANOOTEGHEM: Those are the numbers that we

MR. MARTINEZ: Okay.

MR. WACHTER: Can I add something to it?

Sometimes it's easier to view things as concentrations, like micrograms of something per cubic meter as opposed to pounds or tons, because air pollution is more easily understood as a part per, like a gram per part of air. And if you viewed that, I think some of the typical sulfur dioxide emissions might be 20 micrograms per cubic meter, and a microgram is one times 10 to the minus sixth, one millionth of a gram. If you put things in that light as opposed to pounds or tons, you get sort of a different slant.

MR. MARTINEZ: I understand that. Sometimes the way Reno is and in proximity to the reservation here, a lot of times in the winters you will get the winds and it will blow from the inversion layers, all the pollution will sit and hover over the lake. I know that from going out there with the sports fisherman.

Is this going to occur from possible inversion out there by the Tracy Power Plant and get a big gust of wind and blow that this way? I know that possibility

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exists. You are out there all the time. You can see it. All the pollution comes this way.

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MR. WACHTER: So basically your comment is this area has likelihood of inversions occurring, and you are wondering what the effect of the emissions from the plant would be in an inversion mode.

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MR. MARTINEZ: Right. And then, in addition, any time you burn fuel, coal, you are going to have some sort of acid rain. That's been documented. Has that been addressed in the EIS at all?

MR. WACHTER: There is a section on acid depositions.

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MR. MARTINEZ: I haven't been able to review the whole EIS. I just got it today. And that's it. That's all the questions I had.

Other than one more is this is a test project. So what's going to be the determining factor whether this passes or fails, this criteria that is evolving as you go?

MR. LAWSON: Who wants to handle that one? Somebody different.

MR. JEWETT: I'm not so sure I really understand your answer.

MR. MARTINEZ: In the end there in one of the sections --

MR. LAWSON: Where does that decision come

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from, I think.

MR. JEWETT: Ask it again.

MR. MARTINEZ: Okay. Say the plant is built. This is our tax dollars. Okay. What happens if the plant fails, so this 130 million dollars is toast?

MR. JEWETT: Uh-huh. Sometimes experience is very expensive. But you have to understand that that's one of the reasons that there are 45 projects in this program, why they are scattered all over the United States.

The thing that was really behind this whole program was not just to build individual projects. It was to get some very basic answers. You just mentioned one of them, that is acid rain.

This is the largest environmental technology program in the Department of Energy, and it's an environmental program. It was created because the country was using a lot of coal, the country has a lot of coal, it was importing a lot of oil, and it was affecting our economy. So the issue was how do we cut down on acid rain, and the answer had to be either develop, use as much coal, don't burn as much oil, don't drive as many cars, or find technology answers to those questions so that we can have a healthy economy but also a healthy environment.

This program was created to find some of those answers, to take some of those risks, and the government was

willing to share with the private sector taking those risks so that we would have good answers. Good doesn't always mean we got the right answer. It means we're smarter. We can make better, more informed decisions in the future.

That is why the Congress appropriated money for this program. Our obligation is to try and make this happen.

MR. MARTINEZ: Today there exists a basic criteria to determine pass or fail?

MR. JEWETT: The basic test on this plant is going to be will it run efficiently, will it be economic, will it meet all of its environmental requirements, all the permitting requirements. If it doesn't do all those things, it's going to shut down or be converted to natural gas or something else will happen. If it doesn't work it is not going to run. Now parts of it will run.

MR. MARTINEZ: It is not going to be like another project that they are modeling.

MR. JEWETT: Bear in mind, you go down to Tracy Station now, you will see a whole bunch of electricity generating equipment using natural gas with oil as backup. What we're building here is essentially another gas plant, but the difference is that we are creating gas on site by converting coal into gas and then burning the gas with turbines.

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The real experimental side of this for here, for this station, is integrating this whole thing and making it a very efficient operation, to convert the coal to gas and very efficiently extract the energy out of that, go through the steam and the gas turbine cycle so you get maximum amount of electricity out of the amount of fuel that you burn. To put it another way, use the least amount of fuel necessary to get the amount of electricity that you need.

Making that all work together is not a very straightforward kind of thing. It takes years of evolution. We have reached the point, though, where these are ready to go forward. These are really the tests to prove that this can happen and it will work, commercially. I mean, it works already. But it has to work and it has to be economical as well. I can build you a great car to drive around the moon, but they are 20 billion each.

MR. MARTINEZ: That is all. Thank you.

MR. LAWSON: Thank you very much. Yes, sir.

MR. WINNEMUCCA: My name is Frank Winnemucca.

I am a volunteer worker with Pyramid Lake Tribal Rangers.

Now you people around here are experts on different things. But I don't think that you can control nature. Neither of us. If you people can control nature, you are a better man than I am.

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also we'll do it in an environmental manner. If you say, what if that worst case, if some of the comments are true, and we just can't make it work as cleanly as efficiently as we think it should?

Then after the DOE demonstration period we would continue to run that on natural gas fuel. We don't believe that's the case. We're very confident we will be able to make it work.

But if it doesn't meet the sort of criteria that were outlined by Mr. Jewett, which it has to be economical, it has to be clean, then there will be a lot of information that has been -- will have been gathered to help the next generation of coal-fired power plants. Coal is an abundant resource. We share the same concerns.

Sierra Pacific does have a diverse generation mix. And as we look at technologies, we look at natural gas fired, we look at geothermal, and we use all of those. We also think coal has a place in our future to help keep rates down but only if we can do it in an even cleaner way than our Valmy. Valmy has been recognized, nationally recognized as --

MS. HARRY: In all your energy producing alternatives, do they require the same amount of water to produce, whether coal or natural gas?

MR. MOTTER: Natural gas and coal, those are

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almost a push. Geothermal, depending on how you want to count it, uses significantly more in the case of a plant that uses wet condensers. It uses substantially less, almost zero in the case of those that have air cooled condensers.

But we do plan to live within our existing ancient water rights that we do have as were fully addressed in that Cui-ui recovery plan.

MS. HARRY: Now you mentioned one of the reasons was economic, economy.

MR. MOTTER: Yes.

MS. HARRY: Well, for our tribe, all it would take is one natural disaster, because we depend on the lake for the revenue off of our fishing permits, reservation permits, boating permits.

MR. MOTTER: Absolutely.

MS. HARRY: That is what sustains our general fund. That provides health services, education. Sierra Pacific if it does find that it's not economically feasible could file bankruptcy. But our tribe has no options if a disaster did take place.

MR. MOTTER: All I can say is that --

MS. HARRY: That is not for you.

MR. MOTTER: No, I say on a demonstration project, we in fact take fairly extraordinary measures in

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terms of fail safe design into it to make sure that that isn't going to happen.

I mean, we live here. We're your neighbors, and we don't want to hurt our employees, our neighbors who are close and our neighbors who are further away. So we share those concerns with you and promise to address them fully.

MS. HARRY: Thank you.

MR. MOTTER: Thanks.

MR. LAWSON: Yes.

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MR. MARTIN: I'd like to make one additional comment. Normally when we're talking about environmental impacts and things, they are not as significant as they are to the tribe because the tribe's culture and things is tied up here. As a white person I have moved all over. Tribes don't move. They're here. And so, they are much more concerned about environmental impacts. And our culture tends to be if you abuse, move. Tribes can't do that.

MR. WINNEMUCCA: They are using up the resource. That is why there is not much left.

MR. JOHN: I had one more question for the power guy. How many sites have you identified for this? You have talked about Valmy, you have talked about Tracy. What other sites?

MR. MOTTER: We looked at Fort Churchill, which

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area?

is in Lyon County, where we have two current oil gas fired units. The fair answer is to say that we have looked at probably 80 sites in different levels of detail.

MR. JOHN: Was any of those sites in the Reno

MR. MOTTER: Yes, sir. We have looked at sites in the Stead area. We have looked at sites in the north valleys just northwest of Reno, northwest of Stead. Yes, sir, we have looked at a number of sites in the Reno-Sparks and greater -- the greater Reno-Sparks area.

MR. JOHN: Because you were saying the economical impact. Like I mean, if you are doing it in Reno, you have got all that labor force to choose from right there. But it seemed like to me, that is the sole judge which you guys were basing it on is because it's right out of Reno.

MR. MOTTER: No.

MR. JOHN: Is that a major factor in there?

MR. MOTTER: Economics are certainly a key
factor, as is the environment. We looked at all those
things, infrastructure, costs, socioeconomic impact,
environmental impacts, and Sierra Pacific, part of our
responsibility is to provide power for our customers. We're
fairly close to constantly looking at sites, considering
sites.

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And again, what we did is we screened perhaps 69 to 80 sites, selected a dozen that we looked at in some more detail, finally selected about five sites including the three generation sites plus some sites in the Carlin area where some of the mining loads are increasing, for more detailed evaluation.

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MR. JOHN: Is there any different air quality standards between these outside counties and like in Reno, or are they all basically the same?

MR. MOTTER: The laws and standards do vary from jurisdiction to jurisdiction. There's again the federal air quality standards as well as those that might be accounted for by local agencies.

I believe that most of the state -- most of the air quality regulations in the state -- I have our air quality expert sitting next to me, Mr. Luchetti, if I get this wrong; feel free to correct me, Frank, or Sherry

Daws -- but the major difference would be if you were in an area where there was already some impact to the air quality, where you would be classified as being in nonattainment for one or more criteria of pollutants. Then there are more stringent regulations that are required than in an area that is attainment for all criteria.

Similarly, if you were in a class one area where I don't think this --

13-b

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MR. JOHN: I know Reno is real bad. But I was just wondering like out there by the Tracy area, is that classified with the Reno area or is it classified in I think it's Storey County?

13-b (cont)

MR. MOTTER: It is in Storey County because we're on the south side of the river. We are in fact very close to Washoe County, which had been jurisdictionally classified as nonattainment for ozone based on an event sometime. We looked very closely just as if we had been in a nonattainment area looking at the nitrogen oxide impacts.

13-b (cont)

MR. JOHN: You are still kind of -- I mean, you still haven't answered my question. Is that a major reason why the Tracy Plant was chosen, though, over say like in Reno?

MR. MOTTER: In Reno, physical space is an issue. We don't have the rail spur there. Physical space is a major consideration trying to build right in a metropolitan area.

There is also efficiencies associated with using the existing station. Transmission, it would have required substantially more transmission. Transmission lines have impacts. So we tried to look at that whole package, and Tracy in our assessment was the best site, and in fact, the prime site that we proposed to DOE.

I hope that's responsive to your question.

MR. JOHN: Yeah.

 MR. MOTTER: Thank you.

MR. JOHN: What is the DOE -- I mean, you guys know the difference between Tracy and like putting it in Reno. What was your guys'?

MS. VANOOTEGHEM: In our case what we did is look at the analysis which Sierra Pacific provided us. However, because the project, and that's outlined in the EIS, DEIS, but in our case, the federal government cannot tell the industrial participant where to put the project. They proposed, sent us an answer to a request for proposals, and they sent us a proposal, and they said we're going to want to build this plant, here is where we would like to build it, here is what we want to build, and then this document, the function of this document is to look and analyze whether that's a feasible thing to do. So the purpose of this document really is to evaluate the environmental concerns associated with putting this proposed project in that exact location.

Is that what you are looking for?

MR. JOHN: Kind of that. I mean, to me, it's just more or less based on -- I mean, you are going to have a lot of employment and stuff like that. So basically that is what it is based on, what you are putting into the economy of Reno.

13-c (cont)

13-c (cont)

But what I see is just we're taking the 1 emissions or whatever comes out of that system down this 2 way, which I say if they want, to me, it would be more 3 logical to put it in Reno because they are the ones that are 4 probably going to benefit from it. I think they will have 5 more stricter rules than outside in a county like Storey or 6 7 Lyon. MS. DODD: I have a question. Regarding the 8 ash from the coal, what type of storage area will the ash be 9 10 in? MS. VANOOTEGHEM: That will be in a containment 11 silo, and in no case will there be -- even the conveyors 12 will be contained. So that there will be no way that this 13 stuff can escape. It will be always contained. 14 MR. LAWSON: I think they will be loaded into 15 trucks inside. Is that right? 16 17 MS. VANOOTEGHEM: That is correct, and contained. 18 MS. DODD: There will also be limestone used? 19 20 MS. VANOOTEGHEM: Limestone comes in and it is part of the process, the burning process, to help control 21 22 the sulfur emissions. 23 MS. DODD: Will the grade of the limestone be 24 consistent or would that change? 25 MS. VANOOTEGHEM: It would need to be within

13-c (cont)

14-a

14-a (cont)

14-a (cont)

certain tolerances in order for it to capture the sulfur.

So yes, within a certain standard.

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MS. DODD: What area would that be coming from, the limestone?

MS. VANOOTEGHEM: That I don't know. Sierra Pacific?

MR. MOTTER: There are a number of potential sources within Nevada that could be contracted for for limestone, and we do not have a contract yet, of course, with any individual supplier.

MS. DODD: Would it be of a high grade?

MR. MOTTER: A broad range of limestones would be acceptable, limestones or dolomite would be acceptable.

MS. DODD: Will that change the quality of the emissions that are coming out?

MR. MOTTER: No.

MR. HARRY: I have a couple questions for Sierra Pacific's representative in regards to water rights. What is the total amount of water rights that was adjudicated in the Orr Ditch to Sierra Pacific, in accordance with the plant right now? Well, according to this chart, you are using 1,562 acre feet I guess on an annual basis at the Tracy Power Plant. In less than 20 years, you'll be increasing that amount to over and above, up to 1,216 acre feet.

14-a (cont)

14-a (cont)

14-a (cont)

15-a

I guess the question I have for you is where or 1 how does Sierra Pacific plan to get its water rights to 2 operate this plant? 3 MR. MOTTER: At the risk of trying to do this off the top of my head, I believe it's in the Draft 5 Environmental Impact Statement. If not we'll provide it. 6 But we currently have 4,300 acre feet of water within those 7 decreed rights. MR. HARRY: That is total, consumptive with 9 your wells, with the ground water. 10 11 MR. MOTTER: Yeah. Roughly I believe 600 acre 12 feet approximately are ground water. The rest is surface diversion. 13 MR. HARRY: So in essence, you would be kind of 14 switching your water rights to maintain a certain amount. 15 16 MR. MOTTER: That is precisely right. This unit which uses less water than some of the existing ones on 17 a per unit per megawatt hour power basis, because this power 18 19 plant is more efficient, it would tend to displace rather 20 less efficient generation. So we're more moving water 21 rights around than saying we need all new. 22 MR. HARRY: That was all I had. 23 MR. LAWSON: Thank you. 24 MR. MILLER: I have a question for Sierra 25 Pacific. My name is Kenny Miller.

15-a (cont)

15-a (cont)

15-a (com)

16-a

We were talking about spills and cleanup. Is there an emergency planning committee with Sierra Pacific or are you affiliated with the county, state or cities in assisting in a cleanup?

MR. MOTTER: What I'd like to do is defer this question to Mr. Luchetti.

MR. MILLER: Sure.

MR. LUCHETTI: We have what is called a spill control countermeasure plan at all our facilities, which deals not only with oil spills but with hazardous material spills. I believe you were probably involved with some of the work that we're trying to coordinate with the State of California.

MR. MILLER: Yeah, we were at one of the workshops, Mervin and I, and we came up with a question. That is why I was kind of concerned about it. Because they did a scenario there similar to Dunsmuir in California, and we weren't notified in that scenario when that spill occurred if somewhere along the state line. The chemicals finally made it down here and we said, hey, did you call the tribe?

There was a big question about that, and I'd like to see some kind of a plan available to the tribe so we may be notified when that spill occurs so we could take some action action down here.

16-a (cont)

16-a (cont)

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MR. LUCHETTI: We have that same concern, and the concern that we have is that when there is a spill in California, we don't get notified, the water purveyor. It was our leadership that brought the County, the State of Nevada, California and you folks to that meeting to try to coordinate those things on the Truckee River.

A lot of the comments here regarding spills on trains, the Truckee River, that is a concern of ours also as the water purveyor, and we're trying to coordinate that on a regional basis and involve the tribe.

MR. MILLER: How far along in the planning are you?

MR. LUCHETTI: We're at the point now where we have got the State of California and the State of Nevada talking with Washoe County. We don't have an all encompassing plan now.

What we need to do, Kenny, is actually go through an exercise and see whether or not what we have got, the tentative agreements we have now, will in fact work.

We're at that point. Does that answer your question?

MR. MILLER: Yeah.

MR. LUCHETTI: But we do have, we do have spill control plans. We have people that are in fact trained within the company to respond to certain hazardous material spills. We also have contractors, there is a very large

16-a (cont)

contractor in the City of Sparks that we have contracted with.

The railroads also have contractors that are immediately available in situations where there is an accident up and down that corridor.

MR. MILLER: I was thinking about the amount of coal that will be brought in by rail car, and if there is ever an accident with those things, you know, you are going to have a lot of coal to clean up and is there enough equipment in that plan to cover that.

MR. LUCHETTI: One thing you should remember, the coal is going to be coming from Wyoming, it is going to be coming from Utah, in all probability. So that the section of the river that we're really talking about here, potentially the affected area is that section from Wadsworth to the Tracy facility. It's not upstream of that point. So there is relatively a short section.

MR. MILLER: Anything could happen along that river between those points.

MR. LUCHETTI: There is no question.

MR. LAWSON: Is there any other questions or

22 comments?

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MR. MARTIN: I'd like to comment about minimizing your response time.

MR. LUCHETTI: Yes. Definitely.

16-a (cont)

16-a (cont)

77 MR. JAMES: I'd like to make a comment. 1 THE COURT: Yes, sir. 2 MR. JAMES: My name is Alvin James. I'm with 3 the Tribal Council. 4 17-a As many of you know, the Bureau of Indian 5 affairs has direct responsibility with the tribe, and I was 6 wondering if you forwarded any of these documents to the --7 MS. VANOOTEGHEM: Absolutely. 8 MR. JAMES: -- central office at the Bureau. 9 17-a (cont) MS. VANOOTEGHEM: Both. 10 MR. JAMES: We'd like to have time to do that 11 12 too so that we could have the benefit of their analysis of 13 this document. MS. VANOOTEGHEM: Mr. James, we understand that 14 the tribe -- that the BIA will potentially be at the meeting 15 on Wednesday -- on Thursday in Reno. So that's our latest 16 information. 17 MR. JAMES: They have local staff. But it's my 18 17-a (cont) understanding that central office has environmental people 19 on staff to review these things. 20 21 MR. PELL: Where is that central office? 22 MR. JAMES: In Washington. 23 MR. LAWSON: Is there any other question or comment? 24 25 If not, I'd like to thank the Tribal Council

for having us here and allowing us to get this input from you and from other members of the local community, and thank you very much, sir. You have been very gracious.

And with that I'd like to close this comment session. Thank you.

(Hearing adjourned at 8:57 p.m.)

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STATE OF NEVADA 1 ss. COUNTY OF WASHOE 2 I, ERIC V. NELSON, a notary public in and for 3 the County of Washoe, State of Nevada, do hereby certify: That on Tuesday, June 21, 1994, at the Pyramind 5 Lake Paiute Indian Tribal Council Chambers, Nixon, Nevada, I 6 was present and took stenotype notes of the public hearing 7 before the United States Department of Energy; and 8 thereafter transcribed the same into typewriting as herein 9 10 appears; That the foregoing transcript is a full, true 11 and correct transcription of my stenotype notes of said 12 13 deposition. 14 Dated at Reno, Nevada, this 1st day of July, 15 1994. 16 17 18 19 20 21 ERIC V. NELSON, CSR #57 22 23 24 25

## Pinion Pine Power Plant at Tracy Clark Station ENVIROMENTAL CONCERNS

By: Mervin Wright, Jr., Director Pyramid Lake Paiute Tribe Department of Water Resources

In dealing with the water resources of the reservation, namely water rights, concerns related to water rights, water quality and water quantity are in focus. As Pyramid Lake is subject to every activity upstream of the reservation, it is without question that any increased demand on the Truckee River is a concern. Since Nevada is the driest state in the union, and the water quantity is of utmost importance, any development upstream is viewed as a threat until assurance can be provided to the Tribe. The recent 6 year drought may not be out of the ordinary as some people speculate. The climatology of the region may be impossible to understand by many businesses that depend on water for sustenance.

18-a

If the Tracy Clark Station (TCS) has water rights dated 1961 and 1974, how will the Pinion Pine Power Plant (Power Plant) divert water under extreme drought conditions as experienced in 1992?

18-ь

Today as we have come to know, priorities are exercised, but politics plays a larger role than we anticipate. Provided that the Tribe's first and second claim under the Orr Ditch Decree are subject to return flows, will TCS exercise the same control of water flows in the lower river as Sierra Pacific Power Company's (SPPC) 40 cfs right?

18-с

Out-takes have not been addressed as to the points of diversion at the Power Plant. What type of out-take will be supplying the Power Plant with Truckee River water?

18-d

Has SPPC determined, if necessary, to dedicate water rights for use at the Power Plant?

18-е

Acid rain will potentially be an impact when sudden cloud bursts and rains occur. Emissions from smokestacks will settle on the ground in the surrounding area as winds generally blow east along and through the river corridor. Has this potential impact been experienced in other areas? Are there any methods or alternative practices to avoid this from being an impact? What do you advise or suggest downstream users do in the event that this occurs?

18-f

Any major industry that proposes development upstream from a valuable resource such as Pyramid Lake and it's fishery, and that proposes a harmful threat is taken into account seriously. Nothing should be done that will pose an eminent threat for present and future uses of downstream resources.

18-g

For the purposes of the Department of Water Resources, these are concerns that we have listed from our review of the DEIS. If it is possible further review and comments may be required. If you should have any further questions, please contact me at (702) 574-1050. Thank you for your time and consideration.

### Environmental Concerns on the Pinon Pine Power Project at Tracy Clark Station

Prepared by Monte Martin
Environmental Director, Pyramid Lake Paiute Tribe

- 1. We have a major concern about air pollution. This is a pilot demonstration project. One of its purposes is to "assess long term reliability". Long term reliability is vital. "Upsets" drastically increase pollution levels. Upsets are not controlled by existing state or Federal regulations. This is a large expensive project which we will be our neighbor for 30 or more years even if the technology proves unreliable.
- 2. 100% destruction cannot be achieved by incineration No machine is 100% efficient. Even very small percent inefficiencies become vast amounts of material when hundreds of tons per day are being incinerated. The project wants to burn 800 tons (some places in the report say 816-880 tons) a day. Even at 99.9 % capture efficiency it would still release almost a ton a day of particulates. Assuming the projected amount of particulate matter 135 Tons of particulate matter is not overly optimistic; that is still a lot of fly ash. It is magnified because it is 365 days a year, year after year. Sulfur Dioxide is projected at 225 tons per year. Sulfur Dioxide combines with water vapor in the air to make acid. The report optimistically assumes 6.4 tons of sulfuric acid mist a year. (4-10) That is a lot of acid. It is worth noting that the "no-action alternative" shows 63 tons per year for particulates and 53 tons per year of SO<sub>x</sub> much less in both cases. (p 2-30) There is also projected to be 25.7 tons of Volatile Organic Compounds (VOC(s)) VOC(s) are not conducive to good health.
- 3. We are concerned that modeling for pollution dispersion is not site specific and does not take into account the peculiarities of Northern Nevada meteorology and topography. Historically Northern Nevada has 150-180 inversions a year. These inversions trap pollutants into a shallow zone of air from ground level to about 600 feet. This means much of the time the amount of pollution Sierra Pacific is permitted to dump into the air will stay close to the ground and will not disperse well.
- 4. Northern Nevada has the second all time record for a stagnating air mass on the North American Continent. For up to 35 days at a time the air does not move more than 5 miles. This means the same air gets concentrated with pollution because there is very little air movement for long periods of time. Displacement (Mixing) of air is the major mechanism used to keep pollution levels from concentrating. Your predicted impacts on micro grams per cubic meter of air on table 4.1.2-4 seem to be very optimistic and unrealistic in light of points #3,4, and 5 of this paper. When the air is displaced it is much more concentrated than one would expect and have adverse affects much farther down wind.
- 5. The reservation's major population center is Wadsworth. Wadsworth is less 15 miles east of the Project. The prevailing westerly winds make Wadsworth and a non tribal town Fernley down wind most of the time. There are mountain ranges on the North and South of the project. They will tend to trap pollutants and funnel them and the wind when there is any flows east. The Mountain ranges funnel effect ends at Wadsworth Concerns #3 and 4 indicate an amplification of the pollution problem. The area of Wadsworth \ Fernley is already environmentally stressed by the emissions from Nevada Cement. It is my understanding it burns about 10 tons an hour of coal. Some people in the area already

19-d

19-е

suffer respiratory distress from existing air pollution. They do not need more large scale air pollution.

Coal contains trace amounts of heavy metals (ring mercury entirency chromium)

19-e (cont)

6. Coal contains trace amounts of heavy metals (zinc, mercury, antimony, chromium, beryllium and lead) which are toxic and often times concentrate as they are absorbed and travel up the trophic levels of the food chain. These materials start out as air born particles but many will get into the soil and water as gravity causes them to drop out, as they serve as a basis for water vapor to condense on etc.. This is cumulative for as long as the plant operates. Multi-year accumulation needs to be addressed.

19-f

7. The handling of 48,545 tons per year of LASH assumes that the Lockwood land fill will remain open. It is my understanding that Lockwood is not a 258 approved Land fill. It may be closed before the end of the century. The no-action alternative produces no LASH.

19-g

8. Eastern coal burns are planned for "short term testing" what ever that means. Eastern coal is much higher in sulfur thus much higher SO<sub>X</sub> will result for the duration of the testing. Because so much fuel is being consumed even small inefficiencies are huge amounts of pollutants.

19-h

9. We are also wondering about the temperature effects your cooling ponds will have on the Truckee river. Your report mentions one pond is lined with impervious material the other is not. (3-24) Although the calculated inflow is "less than .1 % of the flow in the river (at normal flown conditions of over 400 cfs) there are often times when the flow is not "normal". The report addresses TDS increases but does not seem to address possible temperature increases caused by seepage from the cooling ponds or from ground water in contact with the cooling ponds. Most plants operate at around 30-35% efficiency rates and throw the rest of the energy out as waste heat. Burning 800 tons a day of coal creates a lot of heat to get rid of. River temperature is very significant during spawning of the federally listed Lahontan cutthroat trout and the Cui-ui, an endangered species. Although the Cui-ui do not get past Derby Dam, your report suggest to me a need to worry about possible water temperature changes from Tracy Clark down to Derby Dam.

19-i

10. There is some question about coal storage. Are the areas open or closed? What provisions have been made to assure that there will be minimal coal dust from unloading, storage, transportation and wind? What about a fire in the coal storage areas? Coal dust has a significant explosion hazard.

19-i

11. Pyramid Lake is not very far from the proposed plant as the crow flies. It economy depends on tourism and recreational activities. It does not want a black haze of particulates in the air over the lake. Most of the tourist are go to the side of the lake closest to the proposed coal plant.

19-k

12. If the Tribes environmental interest are ignored or minimized it may become necessary for the Tribe to institute its own air quality standards. Although the Tribe's standards would only directly affect tribal space they would in directly affect those outside near by who need discharge permits. Having a second large scale coal burning facility close to the reservation would certainly make air quality standards more necessary and make it harder to determine who was doing what to the air.

19-l

The report mentions other proposed sites it seems to me that the most logical place for such a project is North Valmy due to its remote location and because the area already has a coal fired

19-m

facility. The major reason for excluding this site seems to be that it would cost Sierra Pacific a little more to not have natural gas alternatives and to construct a new control room and could use fewer people to run the plant. The Federal Government is paying 50% or \$135 million of the construction costs. Sierra Pacific is getting a large generating system at a much lower cost than if it had to go it alone. The project could at least be put where it would cause minimal problems with population and endangered species. North Valmy has a better Score for environmental acceptability in the DEIS you gave us to study and make notes on. (p2-23). The statement that a no - action to this project would likely result in the same plant in the same place burning natural gas being built is almost ludicrous. There is a \$ 135 million reason why it is in Sierra Pacific's best interest to build a subsidized plant. If the Federal Government (DOE) is going to significantly contribute to the construction costs of the power plant the Federal Government should insist that the plant be built with direct linear weighting of "externalities" (LE, environmental and conservation factors). It is interesting to note that in all the mentioned environmental impacts there is a large decrease in the no action alternative compared to the coal plan. Clearly even the most modern state of the art coal burning plants place a heavier burden on the environment than alternative methods available to Sierra Pacific.

19-m (cont)

# UNITED STATES DEPARTMENT OF ENERGY PINON PINE POWER PROJECT

PUBLIC HEARING

Wednesday, June 22, 1994

Rainbow Bend Country Club 500 Blue Declair Lockwood, Nevada

Reported by: Lesley A. Clarkson, CCR #182

ORIGINAL

#### APPEARANCES

DEPARTMENT OF ENERGY

William Lawson - Moderator

PANEL MEMBERS:

Gary Friggens Suellen Van Ooteghem

John Ganz Jim Johnson Jan Wachter

DEPARTMENT OF ENERGY PERSONNEL IN ATTENDANCE:

Jerry Pell Dave Jewett Doug Jewell

FOR SIERRA PACIFIC POWER COMPANY:

Jack Motter

# I\_N\_D\_E\_X

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George Foster	18
Dean Haymore	18
Bill Hollis	20, 23
Mark S. LeBlanc	21
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RENO, NEVADA, WEDNESDAY, JUNE 22ND, 1994, 7:10 P.M.

-000-

MODERATOR LAWSON: Good evening. My name is Bill Lawson. I work for the United States Department of Energy in the Morgantown Technology Center, and I want to welcome you here to this public hearing concerning the proposed Pinon Pine Power Project at the Sierra Pacific's Tracy Station.

This hearing is an important vehicle that the department uses to get public input and public comment on a draft EIS so that we can be sure that we have addressed in the Final Environmental Impact Statement on this project all the important environmental concerns.

So that's the purpose of this meeting. We are here to get public participation, to get your comments, you being the ones closest to this area, on the Draft Environmental Impact Statement that's been prepared.

The comments we get tonight and at two other meetings that we are conducting in this area, as well as any written comments that we receive before July 23rd, will be considered and addressed in the development of this Final Environmental Impact Statement.

We don't have a very large crowd, at least not yet tonight, but we prefer that you register to speak, if you would. And we would like to take people in the order that

they register. But if you don't, after anyone that's registered has comments, we will open it up to any comments that anyone else may have.

We are happy to get written comments. Don't feel like you have to speak. We are very happy to hear from you. We do have a court recorder here tonight so that we get a very accurate transcript of everything that was said, so that when we leave here and go back we will be sure that we have your comment down as you said it so that we can properly address it in the Final Environmental Impact Statement.

There are going to be transcripts made available here in the public reading room. You will find out a little bit more about that. Again, written comments can be submitted, and if we receive them by July 23rd, we can guarantee that they will be fully considered in the Final Environmental Impact Statement. If we receive them after that, we will try to include them.

As I said, my name is Bill Lawson. I'm going to be serving as your moderator tonight. I work at the Morgantown Energy Technology Center. I'm a Department of Energy employee.

Panel members we have here tonight are Gary
Friggens, also from the Morgantown Energy Technology Center.
And Suellen Van Ooteghem, also from the Morgantown Energy
Technology Center.

Mr. Jim Johnson, who works in the Department of Energy's fossil energy headquarters; John Ganz, from the Morgantown Energy Technology Center; and Jan Wachter, who is up here turning slides for me, who also works for us. He is the director of environment, safety and health at the Morgantown Technology Center.

We do have some other Department of Energy representatives here. Mr. Dave Jewett, Dave, from headquarters. Mr. Jerry Pell.

MR. PELL: Thank you.

MODERATOR LAWSON: And Mr. Doug Jewell, over here.

As I said, there are three meetings. This is the second public hearing. There will be one tomorrow night in Reno. Following me, and I am about done now, it will be Gary Friggens. He's going to tell you a little bit about the clean coal technology program, what it is very briefly, and just a little bit about the proposed Pinon Pine Power Project.

Following him will be Suellen Van Ooteghem. She's going to tell you about the National Environmental Policy Act, which is what brought us here, and the process that we are involved in in terms of the Environmental Impact Statement and in terms of your participation here tonight. And she's also going to discuss at least some of the major findings that exist in the Draft Environmental Impact

Statement.

Following that we, is when we will open this up for public comment period to hear from any interested party that wishes to give us comments or give us questions that they feel need to be addressed in the preparation of the Final Environmental Impact Statement.

So with that, Gary Friggens.

MR. FRIGGENS: Thank you, Bill.

If you don't mind, I think I'd like to stand over here, and then I can point to some things on the slides.

But I'd like to start out by just telling you just a few things about the Clean Coal Technology Program, because the Pinon Pine Power Project is part of a larger program that was mandated by congress back in the mid-1980s, with a purpose to demonstrate innovative clean coal technologies for commercial applications. And the Department of Energy has the responsibility for carrying out that mandate.

Now, there are three things I want to show you from this purpose.

Number one, we say demonstrate. And what that means is that generally most of these technologies have been developed and operated at pilot plant scale or at some scale that has not been a full commercial scale. The objective in the program is to operate these advanced technologies at a commercial scale so that we can demonstrate their economic

viability, their environmental performance, their efficiency and so on.

When we talk about clean coal technologies, we mean advanced technologies that use coal and convert coal to energy, that are indeed cost effective, that, for instance, create affordable power, that are much cleaner, environmentally speaking, than conventional technologies. And that also are efficient in the use of the feed stops that go into making the power.

So the program has as its objectives, then, promoting environmental protection, as you see here, enhancing efficiency and reliability, and providing opportunities for economic growth and employment as well.

The way the program is structured, we do these projects on a cost-shared basis. And congress has allowed the department to share up to half of a project's cost. The other half or more is provided by the, what we call the participant or the private sector, the entity who is really carrying out the project.

The total federal funding that has been appropriated by the congress for the program is 2.7 billion dollars. However, because we are cost sharing at some rate less than 50 percent, it's really about a third. The total cost of projects in the program is nearing 7 billion dollars.

So there's a significant program out there, in fact

45 projects in the program today. These projects just span the entire nation from, all the way from Maine to Nevada and from Alaska to Florida. And you can see the geographical diversity that is represented in the program.

We have conducted the program by issuing five what we call program opportunity notices, which are really asking for proposals to be submitted to us. And then we have evaluated those proposals and we have selected the best ones for negotiation.

The Pinon Pine Power Project was proposed to us in 1991 as part of our fourth solicitation. And indeed I should mention that overall in the program we have had on the order of 200 proposals submitted, so there is significant competition out there, and the fact that Pinon Pine was selected speaks well for the project.

The technology to be demonstrated we refer to as IGCC. Gasification refers to the fact that we convert the coal to a fuel gas, and then we use that fuel gas in the project to drive a gas turbine, or what we call a combustion turbine, to create electricity, and that gas is hot. And we take the gas that drives that gas turbine and we raise steam with it, to drive a steam turbine to create more electricity.

So that's where the combined cycle comes from; combined meaning a combination of gas turbine with a steam turbine. It provides a very highly efficient technology, in

the neighborhood of 40 to 44 percent efficiency, compared to conventional coal-fired plants, which are in the neighborhood of 35 percent. So significant benefits efficiency wise.

In the Pinon Pine project we are going to use a pressurized, fluidized-bed gasifier. A fluidized-bed is a bed that bubbles. The coal and limestone is in the small particles, and they are in a turbulent state within the bed to get good mixing. The limestone is in the bed to capture much of the sulfur in the coal.

And also another important aspect of this project is that after the gas leaves the gasifier, the gas is further cleaned of sulfur and particulates in what we call a hot gas cleanup system, which again adds efficiency to the process, because you don't have to cool the gas down in order to clean it further. So it's very, again a very unique process and highly efficient.

The participant in this case, as you are aware, is Sierra Pacific Power Company, and the size of the project is 104 megawatts gross. It's approximately 95 megawatts net. It's going to be located at the Tracy Station. I'm sure that everyone here is aware of where that is, just off of Interstate 80, 17 miles east of Reno.

The total project cost, as you see, is 270 million.

And in this case the Department of Energy is providing half of that cost, or 135 million.

The project objectives are stated on the chart. I would just point out again that our concerns are to show cost-effective performance with regard to superior environmental performance, with regard to reliability, maintainability, and to demonstrate all this process in a, in a real utility setting at full commercial scale.

Just quickly, to go through the process for you.

coal and limestone are crushed into small particles and mixed and introduced into the gasifier, along with steam and air. The coal is partially combusted to create heat, and the rest of the coal is, undergoes a reaction with the steam to convert it to a fuel gas, which exits the top of the gasifier.

The ash that's in the coal and the limestone that has been used to capture the sulfur that's in the coal become heavier in the process and larger, and they fall out of the bottom of the gasifier and are taken to what we call a sulfator where they are oxidized and prepared for disposal.

The solid wastes can be disposed of in a land fill.

In fact in our Draft Environmental Impact Statement the

Lockwood land fill is identified as a possible potential way

to dispose of this solid.

However, the solid, in similar circumstances, has also been used commercially for such things as soil stabilization or use in concrete or gypsum, aspects like

that. So Sierra Pacific is currently also taking a look at whether or not the solid that comes out of the process could be used as a by-product rather than as a land-fillable waste.

The gas that comes from the gasifier goes through a cyclone separator to separate much of the dúst that is in it. And that dust is returned to the gasifier, and then it goes, the gas goes through a cooler to reduce the temperature from some 1800 degrees Fahrenheit down to 1000 or 1100 degrees Fahrenheit before it goes to the hot gas cleanup system.

And that cleanup system will remove most of the rest of the particles and also most of the rest of the sulfur that remains in the gas. The sulfur removal uses a basically a zinc-based sorbent that is an advanced type of way to remove sulfur.

The cleaned gas then goes to the combustion turbine through the generator. The turbine drives the generator to produce some 61 megawatts of power. The hot gasses then, as I mentioned, go through a heat recovery steam generator to make steam, and the steam drives the steam turbine to generate an additional 43 megawatts.

And the gas turbine also produces pressurized air to go back to the gasifier. Some of the steam is drawn off the steam turbine to again go back to the gasifier, and hence we call it integrated gasification combined cycle.

I won't go into detail on this site plan of the

Tracy Station. You have a copy in your folder that you picked up as you came in tonight. The areas in red represent the new structures that would require construction if the decision is made positively with regard to the National Environmental Policy Act process and the project proceeds.

In addition, a new evaporation pond would be built on site.

Finally, just to mention a little bit about the project's schedule.

If there is a favorable record of decision from the standpoint of NEPA on this project, then construction would start in the time frame of the end of this year, the beginning of next year. Operation would begin around February of 1997. From a Department of Energy perspective, that would be followed by a 42-month operation period to demonstrate the technology. At that point DOE's partnership in the project would end.

But of course the plant, if it proves to be successful, would continue to be operated by Sierra Pacific. And of course the lifetime of a plant like this is expected to be at least 25 years and perhaps longer. So if the project is successful, the power generated is economic and so forth, then we would expect that Sierra would continue operating for a time to come.

So with that, I think that ends my presentation.

And I'd like to turn the floor back to Bill.

MODERATOR LAWSON: Suellen. Suellen Van Ooteghem will tell you about the National Environmental Policy Act process.

Suellen.

MS. VAN OOTEGHEM: Good evening, everyone. I'm Suellen Van Ooteghem, as Bill just said.

Thank you, Bill.

And I wanted to tell you a little bit about the National Environmental Policy Act and some of its ramifications with respect to this project. We also call it NEPA for short. And rather than long words, we will use the acronym NEPA.

This is a federal law that was effective as of January 1st, 1970. And the goal of that law is to promote better environmental planning and decision making, and to protect the environment.

And NEPA requires an evaluation of environmental impact for any proposed federal action. And when, any time when federal moneys, federal lands, or federal permits are required, then a NEPA evaluation would have to be done.

In this case the proposed federal action would be to provide cost-shared financial assistance to Sierra Pacific to build the 104 megawatt coal-fired power plant that would be located at Tracy, the one that Gary just described.

Given that -- NEPA requires that one also consider a no action alternative. That is, that what would happen if DOE were not going to take or do the proposed action. In this case the no action alternative would simply mean DOE does not fund the project and that the specific IGCC that Gary discussed is not demonstrated at this site.

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DOE does typically an analysis to determine how, what level of NEPA documentation will have to be done. And in this case DOE made the determination that to be absolutely sure that all issues were considered, that you had to do an Environmental Impact Statement. And this is the most complex level of NEPA documentation that can be done for any project. And the reason for this is what we want to do is be sure that all of the factors were considered.

The DOE NEPA process requires a number of steps.

And right at this particular time we are right here, we are having a public forum, where we are discussing, we are looking for your comments. And that's the purpose of this meeting. We are looking to obtain your comments, your input, relative to the document that we have. And I hope you have all managed to get a copy. If not, we can certainly arrange for that.

When we then get your public concerns, those will be addressed in the Final Environmental Impact Statement that is generated. And as a final part of this, there will be a

decision, a record of decision based on the Environmental Impact Statement that's been developed.

Next we would like to talk just a little bit about some of the issues that came up and what our analysis showed in this.

One of them, though, is that -- the first one is that with respect to visual quality, the visual impacts of emissions and plumes would not be significant for this project. The air emissions are expected during -- the air emissions that are expected during operations would include sulfur dioxide, oxides of nitrogen and particles and carbon monoxide.

However, we did modeling regarding that, in fact very conservative modeling, and the results indicate that even using a very conservative model the concentrations would be in compliance with the National Ambient Air Quality Standards, that national parks and forests in the vicinity would not be adversely affected by these impacts -- by these emissions, rather. Any increments in air emissions due to the proposed plant would be small in comparison with allowable emissions under the law. They would be very minuscule.

With regards to the river itself, river quality would not be impacted by operation because the plant would continue to be as it is now, a zero discharge facility. That

means that no water comes from a point source back to the river.

#### Okay?

Downstream users. In terms of the total amount of water that would be lost would be 1.4 cubic feet per second, and that is typically less than one percent of Truckee River flows. And under the very lowest flows experienced in the last 20 years, I believe, it's less than three percent of that low flow condition.

With regard to the endangered Cui-ui sucker and the Lahontan cutthroat trout, this is required, we have to look at the potential effects on any endangered and threatened species.

And with regard to them, neither species is present, first of all, in the vicinity of the project. The proposed project's surface water consumption would not have an impact on the implementation of the Cui-ui Recovery Plan. And since this plan, and the reason for that is that this plan already assumes full use of Sierra Pacific's existing water rights.

So no new water would be taken, only water that's already figured into the Cui-ui Recovery Plan. So therefore, the analysis suggested that there would be no effect on the Lahontan cutthroat trout, the Cui-ui or the bald eagle in this area.

Limestone, coal and ash forms a mixture that's called by the acronym LASH, and that would be a major solid waste from this proposed plant. It would be about 49,000 tons per year. And Bill already discussed -- I mean, Bill -- Gary, already discussed what would be the ultimate fate of that. Obviously, it can be land filled. However, Sierra Pacific is looking at alternative uses that would actually make this a beneficial product rather than just a waste.

With regard to historical and archeological sites, there are none on the, within the vicinity where this plant would be built. That survey was done, and that's what the results showed.

There would be a considerable beneficial impact from increased tax revenues, and there currently exists an adequate labor force, housing, schools, police protection and medical services for the area.

Now, there may be brief episodes of noise that result from steam blowing during the construction phase. And nearby residents would be notified before that were to happen, that there would be a possible noise disturbance, and would be offered the opportunity to temporarily relocate if they wished until the event is over.

There are a lot more conclusions and a lot more information presented -- there is a lot more information presented in the Draft Environmental Impact Statement. And

we would like to refer you to that document for some of those other factors that are involved.

And the Draft Environmental Impact Statement also discusses mitigation methods for construction, visual and onsite habitat impacts, to name just a few of that you will find in that document.

This is the process that we would go through. As you can see, it's rather lengthy. It started in June of '92 with the publication of a notice of intent to prepare an Environmental Impact Statement. Where we are right now is we are here. We are having public hearings associated with the document now that it's been produced.

Following that, we will -- and through this period, from the point when the document was, when the public was informed that the document was available on May 27th, through July 23rd, we will be really delighted to receive your comments, either written or orally here at the meetings. And those comments will be incorporated and considered in the preparation of the Final Environmental Impact Statement, which we hope to have available by September, with a record of decision by October of 1994.

If you are interested in sending comments to me, written comments, this is my address. You'll find that in the packets that you currently have. And please just label it so that I know what it's about.

And finally, in terms of any added documents relative to the EIS that we are, our background documents, they are found in these locations, in these three libraries, as well as in the Department of Energy reading rooms. So if you are looking for additional documentation, that's where you can find it. If you can't find what you need, you can always call me, and we will get you what you need.

So with this, I'll turn it back over to Bill.

Thank you, Bill.

MODERATOR LAWSON: Thank you, Suellen.

We would like to begin our public comment period at this time. We do have some people who have registered to speak. I'd like to call on them first, but at the conclusion of their comments if anyone else has anything to say, we certainly welcome your participation.

Mr. Bill Hollis.

MR. HOLLIS: Would you put my card to the back, then.

MODERATOR LAWSON: Yes, sir, be happy to do that.

Mr. Paul Stieger.

MR. STIEGER: Thank you. My name is Paul Stieger,
I live in Reno. And for the past 42 years -- I need to flex
my knee, thank you -- past 42 years, I have been involved
with the completion and putting into service 22 coal-fired,
gas-fired steam generating plants, including five 750

20-a

18 megawatt units for Pacific Gas and Electric Company. 1 20-a (cont) 2 I'm heartily in favor of this type of technology. I'm very happy to see the progress of it, and I certainly 3 hope the general public feels as I do. Thank you. 5 MODERATOR LAWSON: Thank you, Mr. Stieger. 6 Mr. George Foster. 7 MR. FOSTER: I really don't have much as far as 8 9 comments go, other than to say that I favor the project. 21-a I'm a resident of Storey County. I feel that 10 there's going to be a definite beneficial impact to Storey 11 County as far as taxes are concerned. I represent people 12 that work on these type of projects, plumbers and 13 14 pipefitters, welders. They all support the project. I think that you have done an excellent job 15 explaining what the project consists of. I think you have 16 17 really done good research on what positive and negative 18 impacts it would have. And I'm really pleased with the way 19 things are going, and hope to see the project start as soon 20 as possible. 21 MODERATOR LAWSON: Thank you, Mr. Foster. 22 Mr. Dean Haymore. MR. HAYMORE: I'm a Storey County building official 23 22-a and planning administrator, and it would be one of my things 24 25 to watch over -- everything fall down -- watch over this

project for Storey County and to make sure that this environmental impact study is done correctly and thoroughly to make sure that we protect the surrounding area.

22-a (cont)

There's a couple of things, and I have not had a chance and I will have written response to you, but a few things is the noise impact of the steam blowoffs and stuff needs to be studied for the livestock mitigation to make sure we take precaution of that.

Also with this noise blowoff, and I'm not exactly sure how or when it will happen, but maybe some posting on the I-80 so cars aren't alarmed or get shocked with the loud blasts of noise, that mitigation.

I also just had, briefly, see there is no money funded or study done for the decommission of Pinon Pine.

Hopefully it won't be decommissioned for 50 years or more, but I'd like to see Sierra Pacific definitely put that in a cost factor analysis study to make sure there is the proper decommissioning of the plant when that time comes forward.

22-b

Besides that, as myself, all the information that has been provided, I think DOE has done an excellent job, Sierra Pacific has done an excellent job. And in partnership, Storey County hopefully will do an excellent job to make sure this project takes all the responsible necessary impacts and studies to make sure it is a good, clean and beneficial project for the community of northern Nevada.

22-c

20 1 MODERATOR LAWSON: Thank you, Mr. Havmore. Mr. Hollis. MR. HOLLIS: A couple of my questions is where is 3 this coal coming from? MS. VAN OOTEGHEM: My understanding is the coal 5 would be coming from probably Utah. 6 23-a (cont) 7 MR. HOLLIS: High sulfur content? 8 MS. VAN OOTEGHEM: The sulfur content -- what is ð the sulfur content? 10 MR. HOLLIS: I said high sulfur content? MR. FRIGGENS: No. If I could answer that. 11 designed coal is a western bituminous coal. The source has 12 not been finally decided on yet, but the sulfur content would 13 not be higher than one percent. There is some planned short 14 duration testing that would be done with an eastern 15 16 bituminous coal, but that is not the design coal. MR. HOLLIS: Your study shows 800 tons a day of 17 18 coal being used. How much ash is going to be generated from 23-b 19 that? 20 MR. FRIGGENS: The ash content is approximately a 21 little less than 10 percent. It's, that's the ash content of 22 the design coal. Of course, that's going to be mixed in With 23 the, the spent limestone that is also introduced to the 24 process. 25 So the ash coming out the bottom will, in general,

21 a rough ballpark figure, would be the combination of the 1 limestone going in, plus the ash that's already in the coal, 2 and ballpark figure I think would be on the order of 135 tons 3 per day. MR. HOLLIS: Okay. So about 135 fons a day are 5 23-b (cont) likely to be going to our Lockwood land fill out there. 6 MR. FRIGGENS: If that is the ultimate decision. 7 If there is not a commercial source found for the by-product, 8 that's correct. 9 MODERATOR LAWSON: Excuse me. Could you speak up 10 11 just little bit? I couldn't hear. MR. HOLLIS: I think we ought to talk to the 12 23-b (cont) 13 commission about raising the price up there. MR. FRIGGENS: I believe the quantity is spelled 14 out in detail in the draft statement. 15 MR. HOLLIS: Okay. Thank you. 16 MODERATOR LAWSON: Thank you, Mr. Hollis. 17 18 Is there anyone else that would like to offer a 19 comment tonight? We would be more than happy to hear what 20 you have to say. MR. LeBLANC: Is there anyone here from Sierra 21 22 Pacific that can speak on their behalf? 23 MODERATOR LAWSON: Sierra Pacific is here. 24 have some people here. It's, we have chosen not to involve 25 them in the sense that it's our meeting. But I'm sure they

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22 1 would be happy to talk to you following this meeting. MR. LeBLANC: Thank you. 2 MODERATOR LAWSON: Do you have a specific question? 3 MR. LeBLANC: Either somebody has misprinted the Δ numbers or they are slipping on the accounting department. 5 6 They are currently putting out 411 megawatts with 24-a (cont) 7 the oil, natural gas fired plant now, and they are going to be turning out 104 megawatts with this coal-fired plant? 8 That's 307 megawatt drop in the amount of power they can 9 10 generate. 11 MODERATOR LAWSON: Just for the record --12 MR. LeBLANC: I would be interested in cutting back 13 their power capability by that much. 14 MODERATOR LAWSON: Just for the record, would you 15 state your name. MR. LeBLANC: LeBlanc, Mark S. 16 17 MODERATOR LAWSON: Gary. MR. FRIGGENS: This Pinon Pine project is not to 18 19 displace the current, the current generation facilities at 20 Tracy. This is a new plant. 21 MR. LeBLANC: This is going to add to their power 22 generation capability. 23 MR. FRIGGENS: That's correct. 24 MR. LeBLANC: All right. I thought this was 24-a (cont) 25 replacement for.

23 MR. FRIGGENS: No, it's not a replacement. 1 MR. LeBLANC: All right. 2 MODERATOR LAWSON: Mr. Hollis. 3 MR. HOLLIS: I had one more question of whether or 4 not how much of that power is going to be available for the 5 local area. At the present time not all of that power out 6 there comes through Reno-Sparks area, it goes onto 7 interchange to everybody else. 8 9 MR. FRIGGENS: I don't know the answer to that. that addressed? 10 11 MS. VAN OOTEGHEM: That's addressed in the document. 12 MODERATOR LAWSON: I'm sure it is addressed in the 13 14 Draft Environmental Impact Statement. My understanding is Sierra certainly puts this on its grid, but the details of 15 16 how that electricity gets distributed should be there, and if not, we will get an answer for you. 17 18 MR. HOLLIS: Okay. Thank you. 19 MODERATOR LAWSON: Are there any other questions or 20 comments? Yes, sir. 21 MR. BRYANT: Will they have --22 MODERATOR LAWSON: Could you state your name, 23 please, sir. 24 MR. BRYANT: Brad Bryant. 25 Will they have to upgrade the Tracy plant now

25-a

26-a

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that's in existence, or is that in good shape, or is that in bad shape?

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26-a (cont)

MODERATOR LAWSON: That's a question I think Sierra

Pacific would more properly address. Brad -- I'm sorry, Jack

Motter.

MR. MOTTER: Could you maybe have him restate the question or re --

MODERATOR LAWSON: Let me see if I got your question right. The question is, essentially, what is the condition of the existing Tracy Station. Is it in good condition or is it deteriorating in any way, would it need to be replaced?

MR. MOTTER: Well, like some of us, it's getting older.

The oldest units at Tracy are about 32 years. The oldest unit, which is Tracy one, which is the 56 megawatt.

MR. BRYANT: You have got two units there?

MR. MOTTER: There are three units, three steam units. Unit one was constructed right around 1962. The most recent, Tracy three, was constructed in 1974 of the steam units. We are just right now completing the construction of two additional power plants, two small natural gas or distillate oil, diesel oil-fired combustion turbines, and those will be commercial in the next week or two.

Specifically with respect to the oldest of those

26-a (cont)

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units, Tracy one, it's, it's had, subject to check, something over 4,000 starts. But it's still, we are still using it reliably in service.

In 1996 we will be, about 1996 is the scheduled retirement date. Quite frankly, we think we are going to get some additional life out of that thing. We will be taking the steam turbine apart, assessing the condition of that unit in 1996, and figuring out do we patch it up, do we do something else, do we do some repowering.

We are going to be continually looking at maximizing the asset life of all of our investments.

MR. BRYANT: Regardless of the conditions of existing Tracy, it has nothing to do with this one there.

MR. MOTTER: No, that's correct, sir. Our loads
will be growing --

MR. BRYANT: It will be separate, right?

MR. MOTTER: It's a separate unit that would be constructed immediately adjacent to the existing unit three. And maybe after the meeting I could show you on the chart exactly where it would go.

MR. BRYANT: Thank you.

MR. MOTTER: You bet. Thanks.

MODERATOR LAWSON: Thank you, Jack.

Are there any other questions?

If there aren't any other questions, I'd like to

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26-a (cont)

26-a (cont)

close this public hearing and thank you all for coming out, and we appreciate your comments. (Applause.) MODERATOR LAWSON: We don't know how to take that. Nobody has ever clapped before. MR. FRIGGENS: They are clapping because it's over. (7:50 p.m., proceedings concluded.) -000-

STATE OF NEVADA 1 SS COUNTY OF WASHOE. 2 3 I, LESLEY A. CLARKSON, Certified Court 4 Reporter in the State of Nevada, DO HEREBY CERTIFY: 5 That I was present at the within-entitled 6 public hearing on Wednesday, the 22nd day of June, 1994, 7 8 and took stenotype notes of the proceedings had, and thereafter transcribed them into typewriting as herein 9 appears; 10 That the foregoing transcript is a full, 11 true and correct transcription of my stenotype notes of 12 said hearing. 13 Dated at Reno, Nevada, this 28th day of 14 15 June, 1994. 16 17 18 Lesley A. Clarkson, CCR #182 19 20 21 22 23 24 25

## REGISTERED ATTENDANCE AT PUBLIC MEETING

(Voluntary)

NAME AND MAILING ADDRESS: FETER S. TUTUS 451 CANYON WAY #55	Do you wish to make an oral statement at this meeting?	
3PARKS IN 89434 PHONE: 702 342 0510	Do you plan to submit a written statement? ☐ YES ☐ NO	
NAME OF ORGANIZATION OR AGENCY and YOUR POSITION:  STOREY COUNTY PLANNING CORING.	Whom are you representing?  Self Federal, State or Local Government Agency Organization Other	
COMMENTS:  POINTS OF CONTACT CLEAN CO.	AL TRUTECTS IN U.S.	27-a

(Apriliar)			
NAME AND MAILING ADDRESS:  GEORGE FOSTER  P.O. BOX 1037  SPARKS, NV 89432	Do you wish to make an oral statement at this meeting?  YES NO		
PHONE: 702 - 359 - 2/42	Do you plan to submit a written statement?		
NAME OF ORGANIZATION OR AGENCY and YOUR POSITION:  PLUMBERS & RIFEFITIERS LOCAL #350	Whom are you representing?  Self Federal, State or Local Government Agency Organization Other		
COMMENTS:  I FAUOR THE PRO	dect	28.	

## UNITED STATES DEPARTMENT OF ENERGY PINON PINE POWER PROJECT

PUBLIC HEARING

Thursday, June 23, 1994

University of Nevada, Reno Jot Travis Student Union Reno, Nevada

Reported by:

DENISE PHIPPS, CSR #234, RPR, CM

ORIGINAL

## APPEARANCES

DEPARTMENT OF ENERGY

PANEL MEMBERS:

William Lawson - Moderator

Gary Friggens Suellen VanOoteghem

Jim Johnson John Ganz Jan Wachter

DEPARTMENT OF ENERGY PERSONNEL IN ATTENDANCE:

Jerry Pell Dave Jewett Doug Jewell

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RENO, NEVADA, THURSDAY, JUNE 23, 1994, 7:15 P.M.

MODERATOR LAWSON: Good evening and welcome to this Department of Energy public hearing concerning the Proposed Pinon Pine Power Project at Sierra Pacific Power Company's Tracy Station in Storey County, Nevada.

This is the third in a series of three meetings this week to discuss a Draft Environmental Impact Statement concerning the Pinon Pine Power Project. My name is Bill Lawson. I'll serve as your moderator tonight, and I'll give you a quick overview of the meeting, and then we'd like to give you two very brief presentations, one by Gary Friggens, who will tell you just a little bit about the Clean Coal Technology Program and how the Pinon Pine Power Project fits in that.

And then Suellen VanOoteghem will tell you about the National Environmental Policy Act and the process that that creates which is why we're here tonight. And she'll also relate some of the major findings in the Draft Environmental Impact Statement. Following that, we'll entertain any comments from anyone here.

The purpose of the meeting is to solicit comments on the Draft Environmental Impact Statement from all interested parties. Public input is a critical element

in developing Environmental Impact Statements to ensure that the issues are adequately addressed. You're the public and it's your comments that we're looking for.

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All comments that we receive here tonight or that are written comments that we receive in the mail by July 23rd of this year will be considered and addressed in the development of the Final Environmental Impact Statement that's going to be derived from the draft.

The Final Environmental Impact Statement will be an important source of information for DOE to decide whether to pursue, continue to pursue this project.

We anticipated a much larger turnout. We would encourage you to register to speak, if you would. That way we're very sure to have your name down accurately. That's very important in case there's any follow-up. There are forms available in the back as you came in for any written comments if you would prefer, either in lieu of or in addition to any verbal comments you have, we would be happy to take comments in writing. They certainly count equally as much.

Normally we would like for you to try to limit your discussion or your comments to about five minutes. If you need more time, we're more than happy to give it to you. But we would like to give everyone a chance to speak and we'd be happy to give you additional time after all the

registered speakers have gone before you.

We do have a court recorder here to prepare a transcript to be sure that we get your comments very accurately. And with regard to that, if you give verbal comment tonight, when you stand to do that, if you would state your name very clearly, if you are representing an organization that would be helpful, too.

Public transcripts that come from this meeting as well as the other two that we have had will be available in about two weeks in public reading rooms in the area, and Suellen VanOoteghem will tell you a little bit more about those.

Again, we will accept written comments, if we receive them, until July 23rd. If we receive them by then we can guarantee that they will be addressed in the Final Environmental Impact Statement. If they come in later, we'll certainly try to address them but there may not be adequate time. So if you're going to send it, mail us comments, please do it by July 23rd.

Let me introduce the people here and then that will conclude my part. As I said, I'm Bill Lawson. I'm Director of the Technology Transfer Program Division, Morgantown Energy Technology Center, which is a field laboratory, U.S. Department of Energy. I'm a U.S. Department of Energy employee.

Gary Friggens. Gary is the Chief of the Clean Coal Branch of the Morgantown Energy Technology Center.

Suellen VanOoteghem is the Environmental

Project Manager for this project. She also works at the

Morgantown Energy Technology Center.

Jim Johnson is the National Environmental Policy Act Compliance Officer at DOE's Fossil Energy Headquarters in Washington D.C.

John Ganz is the National Environmental Policy
Act Compliance Officer at the Morgantown Energy Technology
Center.

And Jan Wachter, who is ably turning the slides, is the Director for Environment Safety and Health at the Morgantown Energy Technology Center.

Also present here, if you have an opportunity to talk to them, is Dave Jewett, Director of the Office of Environ & Systems Engineering. Again Fossil Energy Headquarters in Washington D.C.

Jerry Pell, Senior Environmental Scientist who works with Dave Jewett in headquarters. And Doug Jewell, the project manager for this Proposed Pinon Pine Project at Morgantown Energy Technology Center.

With that, I'd like to turn the podium over to Gary Friggens and he'll tell you a little bit about this project.

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MR. FRIGGENS: Thank you, Bill.

Good evening. The Pinon Pine Project is part of a larger program called the Clean Coal Technology Program which was mandated by Congress back in the mid-1980s, and the U.S. Department of Energy has the responsibility to carry out that program.

Its purpose, as stated in the chart, is to demonstrate innovative clean coal technologies for commercial applications. I'd like to focus on three concepts in that brief statement.

First of all, I point your attention to the fact that these are demonstration projects. By demonstration, we mean that for the most part these technologies have been developed at a smaller than full scale at pilot plants throughout the country, and so there's generally a good data base but not in a commercial application.

And so the point of the Clean Coal Technology

Program is to demonstrate that these technologies do what

they show they could do at the smaller scale in a commercial
environment, a full-scale environment.

What are clean coal technologies? Basically they are technologies that use coal, convert coal to energy, and have the assets of being economic to provide, for instance, affordable electric power, environmentally

superior to conventional technologies and very efficient in the use of coal.

And finally, the aspect of commercial, the whole point in the Department of Energy being involved in these demonstration projects is to show that if successful that they would prove to be good options for widespread commercial use. We're basically trying to demonstrate the way they perform so that the private sector has them available when the additional power and energy is needed.

So in a recap then, the objectives of the program really are to promote environmental protection, to enhance energy efficiency and reliability, maintainability, and to provide opportunities for economic growth and employment.

The program is conducted with cost-sharing from the Department of Energy. By law we're able to provide up to 50 percent in federal funds for the cost for any given project. And I should mention that it is the industrial participant's responsibility, however, to carry out that project. The Department of Energy does not run these projects.

Throughout the entire program, Congress has appropriated \$2.7 billion in federal funds to go toward cost-sharing. These monies have been put toward a total of 45 projects that currently exist in the program. I might

mention that five others of those projects are also various aspects of the type of technology that we hope to demonstrate here at the Pinon Pine Power Project. The total cost of these 45 projects is almost \$7 billion when you include the private sector funds.

This map is simply presented to show that it is indeed a national program we're talking about. We have projects from Maine to Nevada and from Alaska to Florida. So it's a very geographically dispersed program.

Solicitations that we refer to as program opportunity notices but basically are requests for proposals from the private sector to do projects. And these proposals have been evaluated by the Department of Energy, and out of the 200 or so that have been proposed throughout the course of the program, the 45 projects that we have currently going today have been selected. So the competition has been somewhat stiff. The Pinon Pine Power Project was selected in 1991 as part of round four of the program. The technology that would be demonstrated would be referred to as IGCC, and you can read what the acronym stands for on the chart. And I'll get into it a little bit more about what that process is in a minute.

But basically it will utilize an air-blown fluidized-bed coal gasifier with limestone injected to

absorb sulfur in the coal and with the further hot gas cleanup system to remove particles and additional sulfur downstream of the gasifier.

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The participant in this project is Sierra Pacific Power Company. The project size is 104 megawatt gross capacity or approximately 95 megawatts. And as I think everyone is aware, the location of the project is Sierra Pacific's Tracy Station that's located right south of Interstate 80 about 17 miles east of here. You can read about the existing station. Total cost of the project is \$270 million, and DOE, for this project, is sharing half of that cost, or 135 million.

The project objectives are to demonstrate the technology to show that it provides cost-effective reductions in emissions of environmental pollutants and to demonstrate the long-term efficiency and reliability, maintainability and operability of the project of the technology at a utility scale and in a utility setting.

This next chart is a schematic of the process, and I'd just very briefly like to tell you what happens, if I can figure out how to work this. I guess I can't do it. There. I guess I need two hands. All right.

Coal and limestone are crushed and introduced into the coal gasifier, which is fluidized. That means that there are a lot of small particles of solid in there, coal

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and limestone, basically, which are flowing around sort of turbulently like boiling water in a pot of water. And what makes them turbulent are steam and air injected into the bottom of the gasifier.

Part of the coal is burned by the air and that creates heat for the rest of the reaction. The rest of the coal reacts when steam is converted into a fuel gas which comes out the top of the gasifier. The solids that are left, the ash that was in the coal, along with the spent limestone that was injected to absorb the sulfur, come out the bottom of the gasifier and go into what is called a sulfator where they're oxidized and prepared for disposal, either in a landfill or perhaps as commercial byproduct.

Many of these solids have use as a commercial byproduct, and Sierra Pacific is currently looking into the possibilities of using that in this particular project.

The gas comes out of the top of the gasifier, passes through a cyclone separator to remove most of the particles that are in it. The particles go back into the gasifier and the clean gas goes through a cooler to reduce the temperature from 1800 degrees Fahrenheit down to about a thousand degrees Fahrenheit. Then it goes into a hot gas cleanup step which is an innovative technology to remove more particles, and in fact most of the particles and most of the rest of the sulfur that's in the gas is clean enough

to go through a combustion turbine where it's burned to create electric power, in this case approximately 61 megawatts of power.

1 2

The exhaust gases then from that combustion turbine go through what's called a heat recovery steam generator to raise steam that drives a conventional steam turbine. That steam turbine produces an additional 43 megawatts of power. That's how we get to the term combined cycle -- integrated gasification combined-cycle, coal gasification. And the combined cycle means we have both a gas turbine or combustion turbine and a steam turbine producing the electricity. Very highly efficient system.

I won't dwell on the site plan for the Tracy site. I just want to point out that the structures that you see in red which are darkly shaded in the handout you've received are the structures which would be newly constructed if the project were to go forward. And that includes an evaporation pond in addition to the process structures.

Finally, with regard to schedule. If a favorable record of determination were made as the result of this NEPA process, then construction on the project would begin either at the end of this year or in the very first part of 1995.

Operation would be slated to begin a couple years later in February of 1997. And the DOE project would

account for operating the process for 42 months. At the end of that 42 months, DOE participation would end. However, if the technology is demonstrated to be successful, then Sierra Pacific would continue to operate the plant for as long as it is successful or economic and operating in the environmentally superior way that we expect.

And the lifetime of a plant like that is many years, in excess of 25 years. So with that, I hope that gives you a brief overview of the project.

I'll turn the floor back over to Bill.

MODERATOR LAWSON: Thank you, Gary.

Suellen VanOoteghem will now tell us about the National Environmental Policy Act process and discuss the major findings in the Draft Environmental Impact Statements.

Suellen.

MS. VANOOTEGHEM: Thank you, Bill.

As Bill said, I'm Suellen VanOoteghem, and I'm also a member of the Department of Energy. And I'm here today to tell you a little bit about the National Environmental Policy Act, and we call it NEPA. That's the acronym.

This is a federal law which became effective January 1st, 1970 and its goal is to promote better environmental planning and decision making and to protect the environment. NEPA is a process which is required

whenever any proposed project that the government wishes to conduct will use federal monies, federal lands or federal permits.

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The proposed federal action in this case, Gary already told you considerable about, is for DOE to provide cost-shared financial assistance to Sierra Pacific Power Company for the design construction and operation of a 104 megawatt coal-fired cogeneration facility to be located at Tracy.

Now, when we write a NEPA document, we're also required to look at what would be our, what would be the alternative, at least the alternative to the proposed action. And in this case there's a no-action alternative.

DOE does not fund the project and the specific IGCC technology that Gary talked about would not be demonstrated at the Tracy site. That's the alternative that the Department of Energy considers as opposed or in relationship to the proposed federal action.

When you do NEPA documentation, there are several levels of NEPA documentation you can do. And they're graded in terms of how complex you might think that the action might be and how much consideration you have to give to the different factors. And the most stringent analysis that you can do is an Environmental Impact Statement. And that's what's been, what the Department of

Energy has determined needed to be done for this project, an Environmental Impact Statement, so that the analysis is far more indepth than you would find in lesser transfer documentation.

The DOE NEPA process requires a number of steps, and we're at about the third one down here, right here, where we're looking at a public forum for relaying comments and questions and concerns. Once the document has been provided to you all, we're looking for your concerns and your information. And then what we're going to do is we're going to take whatever information you provide us and we're going to address and consider those comments and your concerns when we produce the Final Environmental Impact Statement.

Now, that isn't the decision though. The final situation or the climax of this project or this documentation process is to produce a record of decision.

This record of decision is based on the information contained in the Environmental Impact Statement.

Now, in addition -- well, let's talk next about the major findings that are shown in the Environmental Impact Statement. And again, this is just meant to be a review. This is definitely not exhaustive.

The structures to be added to the existing site are not expected to significantly alter the visual quality

in the area. Visual impacts, emissions and plumes should not be significant either.

 Air emissions expected during operation would include sulfur dioxide, oxides of nitrogen and particles and carbon monoxide. Modeling results in terms of air emissions show that, indicate that the concentrations would be in compliance, concentrations of these pollutants would be in compliance with the National Ambient Air Quality Standards.

National parks and forest in the vicinity should not be adversely impacted by these emissions. Any increments in air emissions due to the proposed plant are expected to be small in comparison with the allowable increments under the law.

In terms of water quality, especially with regard to the river, the river is not expected to, river water quality should not be impacted by operations because the plant will continue to be a zero discharge facility. That means there's no point sources where water goes from the plant site back to the river. Downstream users would experience a water loss of about 1.4 cubic feet per second, which is typically, under most common conditions, typically less than one percent of current Truckee River flows and less than three percent under the worst flow conditions we've had in the last 20 or so years.

The endangered Cui-ui sucker and the threatened

Lahontan cutthroat trout are two fish species that are potentially impacted by this change in water diversion. This 1.4 CFS. Neither is present in the vicinity of the proposed project, however, and the proposed project's surface water consumption would not have the impact on the implementation of the Cui-ui Recovery Plan since this plan already assumes that that 1.4 CFS would be taken because these are existing water rights that Sierra Pacific has. All they're doing would be using their own existing water rights.

There's not expected to be an effect on, therefore, either the remaining Cui-ui fish or the Lahontan cutthroat or the bald eagle which also nests in this area.

In addition in terms of byproducts, limestone, there's going to be a limestone ash, coal ash mixture that we call LASH, and we expect that there will be about 49,000 tons per year of this to be produced as of this product of burning the coal.

The location of the proposed project is not expected to disturb historical or archeological sites. Of course there's been a survey done to verify where those sites might be and how extensive they might be.

And by the way, that information is found in reading rooms, some of this information that backs up these kinds of things.

A beneficial impact of increased tax revenue is expected. Adequate labor force, housing, schools, police protection and medical services are all available in the area now.

There may be some brief noise episodes that result from steam blowing during the construction phase. Nearby residences would be notified if possible noise disturbance, when there are those possible noise disturbances would occur and they would be given the opportunity to temporarily relocate, if they wish.

More information conclusions are found, a lot more conclusion and information is found in this Draft Environmental Impact Statement. And we'll leave you to find those, the ones that are most of interest to you.

The Draft Environmental Impact Statement also discusses factors like mitigation, methods for construction, visual and on-site habitat impacts, to just name a few, and you'll find those again also in the document.

Next we have here a schedule which gives some estimation of where we are in the process. The process began early on in the middle of June, almost two years ago, June 1992, when a notice of intent to prepare an Environmental Impact Statement was published in the Federal Register.

Since that time a number of steps have

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occurred. We had public scoping meetings here a couple years ago and then at this point we just shortly, May 27, we published a notice of availability of the Draft Environmental Impact Statement. That was published in the Federal Register also. And we sent out all of these documents to as many people as had expressed an interest in receiving them.

And now here we are today. This is June 23rd. This is the third of three public meetings to discuss this project, and really more than anything to hear your input about these projects, about this proposed project.

We will have a public, this is part of the public forum to receive your input, and we will be expecting to receive comments and hoping to receive comments from you relative to this document.

Comments will be due through, until the end of the public comment period, which ends July 23rd, 1993. So we need to receive your comments by July 23rd. We anticipate that the Final Environmental Impact Statement will be available by September, and with a record of decision based on that document by October of this year.

If you care to send written comments to me, you can do so at this address, and this is an address that's in your packet. My business card is also in the packet that you have, the blue packet you received as you came in the

door.

And in addition, now we wanted to let you know where you can find backup information on which this document is based. There are three reading rooms in your area where you can receive this information or look at it or copy it whatever you want. And in addition, there are two, there's a Freedom of Information Reading Room in D.C. and we have a reading room also at Morgantown.

And so with that, I just would like to let you know that Bill, we'll turn it over to you again. And thank you.

MODERATOR LAWSON: We would like to begin the public comment portion right now. What I'd like to do is, as I said before, take registered speakers first. But please, even if I call your name, if you speak, please state your name clearly so the court recorder can get it properly, and if you have an affiliation, if you'd like to give us that.

Mr. John Williams.

MR. WILLIAMS: Good evening. My name is John Paul Williams and I'm a researcher appearing here on behalf the Boilermakers Union Local 549.

I'd like to begin by saying, first of all, on behalf of the Boilermakers, that they and I support this project and we want to see this project built at this

29-a

location. However, we would like, while we want to see this project built, we want to see it built with the minimum possible impacts on the environment consistent with an economically feasible operation.

My first concern is about emissions of nitrogen oxides. Now, Mr. Jack Motter, a representative from Sierra Pacific, appeared at the scoping meeting. He said he thought nitrogen oxide emissions would be about .2 pounds per million BTUs of heat produced by the power plant.

Now, I'm very concerned because this is not a relatively clean emission rate for a coal burning power plant. Permit me to display a slide here.

As you can see, the Pinon Plant emission rate, Mr. Motter said it would be about a .2. I'm not holding him quite to his word. Can everybody read that? I tried to do my own calculations assuming 141 pounds of hourly emissions, 887 million BTUs. We see a nitrogen oxide emission rate of about .158. But as I see here, here's a list of about 17 other power plants already built, all or most of them already built and under operation in the United States, some of them as much as eight years old, that are burning with far lower NOX emission rates than this proposed power plant. I'm very concerned. This plant would possibly have more emissions than a conventional power plant when it comes to that particular pollutant of NOX.

29-a (cont)

29-b

The next concern is water use. Now as most of us know, this plant is in an arid area and we're under drought conditions. So any water use by this plant should be scrutinized. We should consider whether, there are alternative configurations of this plant that will reduce NOX emissions and also that could possibly reduce water use by this particular facility.

Now, this graph compares the water use of the proposed plant to two other power plants, both in Wyoming, which use, have an alternative configuration of air cooling which leads to reduced water use.

As you can see, these two facilities will use only about a third or a fourth as much water as the Pinon Plant in relation to the amount of power generated.

Now, the Pinon Plant will use about, oh, six to 700 cubic feet per minute of water. That Neil Simpson plant, which is about the same size, is only going to use about 120 cubic feet per minute of water. So I'd like to see the Final EIS evaluate the possibility of alternative configurations of this project to reduce water use. And also, as I stated earlier, I'm concerned about these NOX emissions. I'd like to see alternative configurations of this project that could reduce the emissions of that particular air contaminate.

Thank you very much for your time.

29-с

MODERATOR LAWSON: Thank you very much, Mr. Williams.

And you indicated you would send us some copies of your slides. That would be most appreciated.

The next speaker is Ms. Sandra Theisen.

MS. THEISEN: Hi. I did go through the documents in the library. It's six volumes that high at the Washoe County Library. I know you're saying this is a new technology with coal, but that's also the excuse they used when they made the Susanville Power Plant. And now it's just a building that's taking up space.

I would like to see, if the DOE is going to provide money, instead go to geothermal because we do have it right here and it is available. Even though it costs more, it would be more beneficial because it's renewable.

And another thing I would like the DOE to consider is we do have inversions in the winter that the emissions would, it would greatly affect our health here in Reno because the power plant is not going to go away if it's put there. It's going to create more pollution which we already have.

I would prefer that you do sponsor the geothermal. I don't like hiding it in Tracy because, if it is such a good technology, why not put it here in Reno?

People in Tracy moved out there for the rural environment

30-a

30-b

30-с

and I feel that if it is such a good --

FROM THE AUDIENCE: Excuse me. I can't hear Could you speak up, please.

MS. THEISEN: These people in Tracy moved out there for the rural environment. If this is such a good technology, why not put it just here in Reno?

And to conclude, I would like to know why DOE doesn't use this technology in existing coal plants instead of building new ones. And that's all I have to say. Thank you.

MODERATOR LAWSON: Thank you.

Those are the only two speakers we have registered tonight. Are there any other comments that anyone would like to offer?

Yes, sir. If you would state your name. I don't know if you need to use the microphone.

MR. ALASTUEY: My name is Steven Alastuey. I'm an environmental student currently involved in environmental studies and I have been aware in the past and have been concerned with the work aspect of the project.

But I appreciate this type of environmentally concerned study and I encourage continued diligence to refine power production to the cleanest process possible and to make it easily affordable to the general public. That's all.

30-c (cont)

30-c (cont)

30-d

31-a

MODERATOR LAWSON: Thank you very much. Is there anyone else that would like to offer a comment? If not, I would like to thank you all for coming. We really appreciate the substantive comments that were received, and I'd like to declare the hearing closed. Thank you. (Proceedings concluded at 7:48 p.m.) -000-

SIERRA NEVADA REPORTERS (702) 329-6560

I-156

24 1 STATE OF NEVADA, 55. 2 COUNTY OF WASHOE. 3 I, DENISE PHIPPS, Certified Shorthand Reporter in and for the County of Washoe, State of Nevada, do hereby 5 certify; 6 That on Thursday, June 23, 1994, at the University 7 of Nevada, Reno, Jot Travis Student Union, I was present and 8 took verbatim stenotype notes of the Hearing entitled 9 herein, and thereafter transcribed the same into typewriting 10 as herein appears; 11 That said hearing was taken in stenotype notes by 12 me, a Certified Shorthand Reporter, and thereafter reduced 13 to typewriting under my direction as herein appears; 14 That the foregoing transcript is a full, true and 15 correct transcription of my stenotype notes of said hearing. 16 Dated at Reno, Nevada, this 30th day of June, 17 1994. 18 19 20 21 DENISE PHIPPS, CSR #234 22 23 24

SIERRA NEVADA REPORTERS (702) 329-6560

25

(Voluntary)		
NAME AND MAILING ADDRESS: LEE DATEY MENT CITIZEN MENT PO.BOL & 5339 Rems. W 09573  PHONES 827-4200	Do you wish to make an oral statement at this meeting?  ☐ YES ☑ NO  Do you plan to submit a written statement?  ☐ YES ☐ NO	
NAME OF ORGANIZATION OR AGENCY and YOUR POSITION: Citizen Hert - N. Nevada, Coordinator	Whom are you representing?  Self Federal, State or Local Government Agency Organization Other	
COMMENTS: Lin here to learn, about	nt proposed bos facility	32-a

## REGISTERED ATTENDANCE AT PUBLIC MEETING

(Voluntary)

NAME AND MAILING ADDRESS: Steve Alasticey 1645 Jackson Place	Do you wish to make an oral statement at this meeting?   ☐ YES 55,NO			
Reno, Nevada 89512	Do you plan to submit a written statement?  ΔYES □ NO			
PHONE: (702) 324-7385	EK TES LINO			
NAME OF ORGANIZATION OR AGENCY and YOUR POSITION: Cifizen Alert	Whom are you representing?    Self   Federal, State or Local			
Volunteer	Government Agency  S Organization D Other			
comments: I'm a volunteer at citizen Alert and involved in				
some other environmental groups (including sierra Club).				
some other environmental groups (including sierra club).  I'll take notes and report to them. I'm also a disabled				
conjecter with a perspective of labor employment tiobs;				
I try to devive sensible aspects of the above concerns. As				
Student this information is us	etul in studies.			

33-a

## REGISTERED ATTENDANCE AT PUBLIC MEETING

7-05-

(Voluntary)

NAME AND MAILING ADDRESS: STACK S. THEISEN FRUS. MY. ROSE HWY Reno. NU 89511	Do you wish to make an oral statement at this meeting?  ☐ YES ☐ NO  Do you plan to submit a written statement?  ☐ YES ☑ NO	
PHONE: 702849-0534		
NAME OF ORGANIZATION OR AGENCY and YOUR POSITION TO KESPET BOURTH FUT STEELS FOR THE SELECTION OF AGENCY AND YOUR POSITION OF AGENCY AND THE SELECTION OF AGENCY AND YOUR POSITION OF AGENCY AND YOUR	Whom are you representing?  Self Federal, State or Local Government Agency Organization Cother	
comments: we would prefer for geothernal power where resourches, rather the and messy power sou	and a very dirty	34-



#### BOILERMAKERS LOCAL LODGE No. 549

2191 PIEDMONT WAY
PITTSBURG, CALIFORNIA 94565
(510) 427-4721
FAX (510) 427-5980

June 6, 1994

Dr. Suellan A. Van Ooteghem Environmental Project Manager Morgantown Energy Technology Center 3610 Collins Ferry Road Morgantown, WV 26507-0880

Dear Dr. Van Ooteghem:

I am a representative of Boilermakers Local 549, which represents many highly skilled power plant construction and maintenance workers who live and work throughout Northern California and Northern Nevada.

Our members and their families may be affected by the Pinon Pine Project. We desire to conduct a comprehensive review of documents related to this project.

The Boilermakers have recently engaged an environmental consultant to review the Draft EIS and related materials on this project. He will be researching the possible environmental impacts from this power plant.

A Boilermaker representative and/ or our consultant may be making comments at the June meeting in Reno on this project, and we may also submit written remarks on the power plant.

We would be most grateful if you could send us copies of the documents referenced in the attached list.

We realize that many of these documents are available in public reading rooms. But our main union offices are in Pittsburg, California. The nearest reading room to our offices is in Reno, Nevada, about 150 miles away, in the County Library.

It has been our experience that it is very difficult to make copies of documents in public libraries. The copy machines feed slowly and break frequently, other patrons want to use the machines, and it takes lots of exact change to run a library copier, and libraries may be reluctant to release these documents so that we could take them to a copy service. It is therefore burdensome and expensive for us to go to Reno and copy these documents. It may even not be possible.

35-a

Page 2

Therefore, we are asking you to send us copies of these documents as listed in the attached page, with the exception of the Draft EIS, which your agency has so graciously provided us already.

In addition please send us copies of any other comments received on this project by your agency, in addition to comments voiced at the scoping meeting. (We are also requesting the transcripts of the scoping meetings in the attached list).

We would also like copies of comments made to your agency in writing by anyone, including other agencies, and notes of meetings and phone calls, memorandums, and reports in any form describing the potential environmental impacts of this project, said notes and reports generated by your agency or anyone else, or submitted to your agency from any source.

35-a (cont)

A fee waiver or reduction may be in order. Information in these documents will be disseminated by the Boilermakers through the EIS process and other sources, and thus will benefit the general public. Documents requested pursuant to NEPA procedures must be considered available without regard to the exclusion of interagency memoranda, and shall be provided to the public without charge, under 40 CFR 1506.0 (f).

In any event, we will be willing to pay reasonable fees. Please notify me in advance if the charges will exceed \$200.00 We are willing to narrow this request to reduce any possible burdens of DOE staff time. Please contact our consultant, John Williams, at 503-626-5736 (fax-503-641-2093) with any questions in regards to narrowing this request, or matters relating to this request.

Please send these documents as soon as possible, so we may peruse this data and prepare our comments for the June 23 meeting in Reno.

Thank you in advance for your cooperation.

Sincerely yours,

Albert L. Franco

Assistant Business Manager

ALF:pr

opeiu #29, afl-cio

cc: Ms. Carol Borgstrom



BOB MILLER
Governor
JOAN G. KERSCHNER

Department Director

# STATE OF NEVADA DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS STATE HISTORIC PRESERVATION OFFICE

Capitol Complex

100 Stewart Street Carson City, Nevada 89710

June 7, 1994

RONALD M. JAMES State Historic Preservation Officer

Dr. Jan K. Wachter Environment, Safety and Health Program Support Division Morgantown Energy Technology Center P.O. Box 880 Collins Ferry Road Morgantown, WV 26507-0880

RE: DEIS - Piñon Pine Power Project, Tracy Station, Washoe Co., Nevada.

Dear Dr. Wachter:

The Nevada State Historic Preservation Office (SHPO) reviewed the subject draft environmental impact statement. The document adequately considers cultural resources as per the National Environmental Policy Act of 1969. Our only comment is a recommendation to remove the Historic Properties Inventory and Archaeological Site Evaluation from public access in the reading rooms. The Archaeological Resources Protection Act of 1979 exempts archaeological site location and content information from the Freedom of Information Act due to the ongoing problem of site vandalism.

36-a

Please contact me at (702) 687-6362 if you have any questions concerning this correspondence.

Sincerely,

Eugene M. Hattori Archaeologist BOB MILLER

STATE OF NEVADA

PETER G. MORROS

R. MICHAEL TURNIPSEED, P.E. Sinte Engineer



## DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

DIVISION OF WATER RESOURCES

Capitol Complex 123 W. Nye Lane Carson City, Nevada 89710 (702) 687-4380

June 8. 1994

Dr. Suellen A. Van Coteghem Environmental Project Manager 3610 Collins Ferry Rd. Morgantown, West Virginia 26507-0880

Dear Sir:

We have reviewed the draft "Environmental Impact Statement" for the proposed "Pinon Pine Power Project" as you requested.

There are no issues or comments that the Division of Water Resources wishes to make at this time or stage of the report.

If you have any questions, you may contact Jason King or George Jackson at 702-687-3861.

Sincerely,

Linge Jackson
George Jackson

Hydraulic Engineer II

GJ/jjs

37-a

Fig. 101-101 Control Section (Section Control of Contro

:DOG

DEAR DR. OOTECHEM:

WHAT IS THE BTU PRODUCTION RATING FOR THE PROPOSED PINON PINE POWER PLANT? I ESTIMATED IT AT ABOUT 1100-1200 HILLION RTUS, BUT IF YOU KNOW A BETTER NUMBER PLEASE NOTIFY ME.

THANK YOU, JOHN WILLIAMS 503-626-5736, FAX-503-641-2093

PSI I DIDN'T SEE

38-a



## WASHOE COUNTY

"To Protect and To Serve"



1001 E. NINTH STREET POST OFFICE BOX 11130 RENC, NEVADA 89520-0027 PHONE: (702) 328-3600 FAX #: (702) 328-3640

DEPARTMENT OF COMPREHENSIVE PLANNING John B. Hester, AICP, Director

June 23, 1994

Ms. Jan K. Wachter Department of Energy Morgantown Energy Technology Center P.O. Box 880 Morgantown, West Virginia 26507-0880

Re: Pinion Pine Power Project, Tracy Station, Nevada

Dear Ms. Wachter:

Thank you for an opportunity to review the Draft Environmental Impact Statement ("DEIS") for above referenced project. Upon careful reading of the proposed project, environmental consequences and cumulative impacts, it appears that the proposed Pinion Pine Power Project is consistent with the goals and action programs contained in the Truckee Canyon Area Plan of the Washoe County Comprehensive Plan. The Department of Comprehensive Planning has no further comment on the DEIS at this time.

39-a

Sincerely

Cynthia Herman

c:1word20clmisotracy11.doc

W. B. Hollis (FOXX Systems) 88 Cercle de la Cerese Sparks, NV 89434-9511 [702] 342-0600 FAX [702] 342-0601

July 1, 1994

Dr. Suellen Van Ooteghem
Environment, Safety, and Health Program Support Division
Department of Energy
Morgantown Energy Technology Center
P. O. Box 880
Collins Ferry Road
Morgantown, West Virginia 26507-0880

SUBJECT:

Piñon Pine Power Project, Tracy Station, Storey County, Nevada

Draft Environmental Impact Statement, for.

Dear Dr. Van Ooteghem:

First, I wish to apologize for the small turnout for your meeting at Rainbow Bend, on June 22, 1994. I felt that the meeting was informative, and enjoyed the opportunity to attend.

The Reno Newspapers and Television Stations have just broken a story on June 29th, about Sierra Pacific Power, Company merging with Washington Water Power, of Spokane Washington. This news immediately brings to the fore the question, how does this affect this project, does it insure that this will happen or does it have the adverse effect.

While I felt that your Draft Environmental Impact Statement was very thorough, I noticed some areas that did bring questions to my mind. The comments are delineated in the attached, or accompanying discussion.

Although there are comments attached, they by an large are not show stoppers, but could be without addressing them maybe a bit more thoroughly.

I am very supportive of this project being completed, for it will bring a bit more strength to Storey County, and hopefully a bit of increased dollar flow into the county coffers.

I am also sending this letter and the attached discussion to the Storey County Commission, and the Comstock Chronicle as copies.

Very Sincerely.

Bill Hollis

Comments and Observations Regarding
Draft Environmental Impact Statement
for the Proposed
Piñon Pine Power Project
Tracy Station, Nevada
May 1994
U. S. Department of Energy

#### Environmental Impacts;

Detailed analyses focusing on the "Endangered" Cui-Ui fish species and the Lahonton Cutthroat Trout. Purportedly neither species present in the vicinity of the project.

Overlooked in the early discussions of aquatic life in the Truckee River were the Brown Trout, and Catfish which are present in the whole river from the Donner Lake area to Pyramid Lake.

Type of Coal and the origination point vs High Sulfur content, disposal of the LASH (Limestone and Coal Ash Mixture) the Noise of the "Steam Blowoff", and applicability of the site construction of Rebuilding, in respect to the geological strata structure, are of serious concert to the ecological and environmental health along the River...

Need Fire Department, Fire Marshall position on potential hazards, fires, explosive events. Regarding the possibility, prevention, and treatment of.

Water usage/loss to the Truckee - during times of drought where the water flow has been all but cut off, and there is no flow. Can the new facilities utilize the existing wells or the ponds for water source, and will the "New" well be sufficient to the needs of the expanded facility?

#### Para 2.1

Coal, Limestone, Coke storage. It would appear that not enough attention has been paid to the storage quantity.

Coal - 800 Tons per day usage, and only 800 tons storage Coke - 800 Tons per day usage, same storage Lime Storage, 5 day supply, - 300 tons, with 60 ton per day usage.

This area has been known to have snow, sufficient as to close the I-80 Freeway East and West of Tracy, a condition that has been known to tie up Freeway and Rail transportation for at least 48 hours.

This induced shortage of materials could occur at a time when the power output for this area could become critical.

Well Water usage for Raw water - What study results have been made to determine effect on the present generators at Tracy, and on the aquifer depletion potentiality of the region?

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40-d

40-е

Increased size of Septic System - Contained Closed Cycle or Drain Field effluent - Siphoning into well water - and into Truckee River Eco System.	40-g
Stormwater Run-off, however low in the past decade, what possibility of heavy stormwater overfilling the "Lined Evaporation Pond"?	40-h
Section 3.4, Pg 3-18 Water Resources	l
The present level of the Truckee is hardly more than a trickle was much the same as last year. At present there are many pools where fish are flopping around in sub standard sized pools.	40-i
Table 3.4-2a and 3.4-2b are very informative as to the analysis of the water samples, but can't help but wonder about the absence of figures for nitrates $NO_3$ .	40-ј
Second Paragraph of Section 3.4, pg 3-19 needs to be reviewed again vs the real life water levels.	40-k
Table 4.1.2-3, pg 4-10, the NO <sub>x</sub> levels seem a bit high.	40-1
Para 4.1.2.3 Acid Disposition, pg 4.23	l
What significance will the Acid Mist/Rain attain during high flow rate from the stacks of the Sulfator, Hot Gas, Combustion Turbines, the heat Recovery Steam Generator or from the Coal and Lime storage handling.  Sulfuric Acid Mist: Acid Rain	40-m
As touched upon in the report (DEIS) in Section 4, the nitrates $SO_2$ , $NO_x$ and combined chemicals do require constant monitoring attention.	40-n
The prevailing winds predicted for the Tracy Area according to the Reno Airport "Wind Rose" are not only misleading but extremely inaccurate in the bargain.	
This was proved by patterns exhibited from the study at the Hi-Shear - Aerojet Plant in Storey County, up Largomarsino Canyon in the hills above and West of Mustang, East of the Airport, and South of the Truckee River.	40-0
Also of wind patterns taken at the Landfill, also up Largomarsino Canyon, and at the Nevada HydroCarbon Plant formerly east of the Mustang Brothels at the Mustang area.	40-0

The Canyon along I-80 and the many connecting and converging canyons along the I-80 corridor create their own weather microsystems, and produce their own wind patterns from the Largomarsino Area to the Smoke House at the Eastern most tip of Storey County.

I suggest that one of the "Air Quality Monitoring systems be stationed at Tracy, Patrick, Mustang, and at the Eagle Picher Plant. the stations should monitor temperature, lumidity, dewpoint, wind direction and speed.

40-p

There is an Air Quality Monitoring Van at the Old Mustang (Washoe County) Landfill entrance, but a remote visual inspection indicates that there may not be wind information available.

#### Section 4.1.3.1 Geology and Seismic Activity

Earthquake or earthquake structure in a predominately earthquake prone area - Faults Structure.

Truckee-Verdi-Reno-Olinghouse Fault Zone Fig 3.3-2 Pg 3-14, 3-15 discussion of fault. Hypotheses as to possible impacts.

40-q

The coverage of past Seismic activity in the study area was a thoughtful treatise, but living on the Truckee-Verdi-Reno-Olinghouse Fault Zone as we do at the largomarsino Canyon Area at Rainbow Bend, the concern regarding earthquakes remains in high profile in the concerns of many residents of the area.

#### Section 4.1.4.1 Water Use and Availability

Truckee River Levels on June 29th, an A.M. reading:

Vista Bridge	111 CFm
Tracy Bridge	75 CFm
Derby Dam	40 CFm
Lahontan Canal	64 CFm

40-r

#### Section 4.1.11 Noise

Because of the potentially hazardous distractions caused by Stack "Flares" and the "Steam Blowdowns", and the rise in ambient light due to the increase of the facilities at Tracy, High Visibility Signage needs to be placed on both sides of the East and West bound lanes of I-80 sufficiently enough removed from the site as to properly alert drivers on the freeway.

Notification to Motorists on Nearby I-80 - Permanent signs by DOT, similar to those placed in High Winds or Low Flying Aircraft, or Dust Areas. Also a permanent statement on the signs that at the closest distance, no ear damage can or will result, ie: no claims.

40-s

It probably would be a good idea, also, if a notice were put in the aviators bulletins such as the NOTAMS and or JEPP, to alert pilots of the presence of the "Flares" in the area to prevent panic from the small aircraft population.

. W. B. Hollis (FOXX Systems) 88 Cercle de la Cerese Sparks, NV 89434-9511 [702] 342-0600 FAX [702] 342-0601

July 1, 1994

Dr. Suellen Van Ooteghem
Environment, Safety, and Health Program Support Division
Department of Energy
Morgantown Energy Technology Center
P. O. Box 880
Collins Ferry Road
Morgantown, West Virginia 26507-0880

SUBJECT: Piñon Pine Power Project, Tracy Station, Storey County, Nevada

Draft Environmental Impact Statement, for:

Personal to Dr. Van Ooteghem

Dear Dr. Van Ooteghem:

First, I wish to apologize for the small turnout for your meeting at Rainbow Bend, on June 22, 1994. I felt that the meeting was informative, and I really enjoyed the opportunity to listen to some one in our "Club House" that knew what they were talking about.

The Reno Newspapers and Television Stations have just broken a story on June 29th, about Sierra Pacific Power, Company merging with Washington Water Power, of Spokane Washington. This news immediately brings to the fore the question, how does this affect this project, does it insure that this will happen or does it have the adverse effect.

While I felt that your Draft Environmental Impact Statement was very thorough, I noticed some areas that did bring questions to my mind. The comments are delineated in the attached, or accompanying discussion.

Although there are comments attached, they by an large are not show stoppers, but could be without addressing them maybe a bit more thoroughly.

I am very supportive of this project being completed, for it will bring a bit more strength to Storey County, and hopefully a bit of increased dollar flow into the county coffers.

I would consider it an honor if you or your department could keep me informed as to the progresses within and without the EPA as to the furtherance of the Piñon Pine Power project, we find it difficult to get reasonable and timely information from SPPCo. on anything it has dealings in, and this is not just

me, but most of the populace.

As I had mentioned to you when you were here I do write a column for the Comstock Chronicle (Virginia City) and I have enclosed my original transcript of the article I filed on the 22nd of June. It doesn't go to the printer until the 29th, and gets published on the 30th of June.

I am sending the attached letter and discussion to the Storey County Commission, and to the Comstock Chronicle as copies.

Thank you again for the opportunity to discourse on this project.

Very Sincerely,

Bill Hollis

Atch: Copy of Article for Newspaper
Letter to Dr. Ooteghem
Discussion of D.E.LS.

Second Transmission to The Comstock Chronicle June 23rd and My birthday.
10:55 am

Sorry about that, I finally read and spell cliccked this and this is the final result if you will. By the way the personal and place names are correct according to the handout from the meeting.

From Bill Hollis, 'round the Bend in the River District.

June 22, 1994

On Wednesday the 22nd of June, at 7:00 PM, at the Rainbow Bend Country Club Building, a hearing was held on the Draft Environmental Impact Statement on the Proposed Piñon Pine Power Project at Tracy Power Station, Storey County, Nevada.

At the Hearing which was moderated by Bill Lawson, Director, Technology Transfer Program Division, and attended by:

Gary Friggens, Chief, Clean Coal Branch;

Dr. Suellen Van Ooteghem, Environmental Project Manager,

John Ganz, NEPA Compliance Officer,

Jan Wachter, Director Environment, Safety and Health;

Doug Jewell, Project Manager;

all from Morgantown, West Virginia Energy Technology Center (METC) and Jim Johnson, NEPA Compliance Officer, Fossil Energy-HQ;

Dave Jewett, Director, Office of Environment & System Engineering; and

Jerry Pell, Senior Environmental Scientist, HQ; of Headquarters, Washington, DC.

The hearing was well prepared, and staffed by apparently some well informed and high powered persons from the DOE. They answered easily the few questions put to them following their presentation, and on only one occasion did they not know the answer to one question which apparently was unfairly put to them by this reporter, and that question should have been answered by a SPPCo, representative, and was following the meeting. The meeting agenda presented the project which is a Clean Coal Technology Power Production plant, demonstrating air-blown integrated gasification combined-cycle.

Specifically, this is a "pressurized, fluidized-bed gasifier with in-bed desulfurization and an external regenerable hot gas desulfurization system using a zine-based sorbent". In short terms this means that Coal and Limestone are mixed in a hot-gasifier, pumped into a Combustion Turbine (that could use Natural gas or propane gas as alternate fuels.) connected to an electric generator with a potential output of 61 Megawatts of power, and the hot gas output sent to a heat recovery steam generator, whose steam output is then sent to a steam turbine also connected to an electric generator with a potential output of 43 Megawatts. Resulting in two generators on line with a potential output of 104 Megawatts.

The Coal and resulting Ash residue will be kept in Silo's until used or discarded.

Regrettably the meeting was lightly attended by the residents of Storey county, although the meeting was graced by the presence of the inimitable Chairperson Shirley Colletti of our County Commission, Dean Heymore of the Storey County Building Commission, and Larry Prater of the Storey County Commission was also there, but he may have been there in his other Persona, that of A Westpac Division of SPIPCo, employee.

Assuming a favorable record of decision to fund the proposed project, Construction would start on this new project in December 1994, and operation could start in February 1997. Total federal funding will be about 50% of the cost of the project, which is expected to be around \$270 Million, with SPPCo. furnishing the balance. This is really a demonstration project to determine the feasibility of this type of power generation. After 42 months of usage, after going "on-line" in about year 2000, the project will continue to be operated in commercial operation by SPPCo.

Word Count 500

John Williams 12770 SW Foothill Dr. Portland, Ore. 97225 503-626-5736 fax-503-641-2093 July 22, 1994

Dear Dr. Ooteghem:

I am a researcher for Boilermakers Local Union \$549. Here are comments on the Pinon Pine proposed power plant. At a June, 1994 hearing on this project, I presented slides on other coal plants that have less NOx emissions, and less water usage than the Pinon Pine facility.

41-a

Here is data on the agencies that issued permits to these plants, so these issues can be pursued. For information about the air cooled coal-fired power plants, the Neil Simpson #1 and #2 are owned by Black Hills Power & Light, and the Wyodak plant is owned by Pacific Power, all in Wyoming, those plants are permitted by Wyoming Department of Environmental Quality. Bernie Dailey is the air quality contact, he may know who to talk to about water use: 307-777-7391.

41-b

The June, 1994 issue of Power Magazine also features an article on air cooled power plants. Other coal fired, air cooled power plants include the Matimba unit in South Africa, the Rosebud plant in Colstrip, Montana.

Additional air cooled units in the United States cited in this article, for which I do not know the fuel, are the Doswell plant in Virginia, Maalaea Unit 15 in Hawaii, and the Sayreville Cogen in New Jersey. The air cooled OLS plant is natural gas fired, in Camarillo, California.

Regarding NOx emissions, the following table lists possible air agency contacts for the possible cleaner coal plants I referred to in my public hearing appearance.

41-

Also, I see a nitrogen plant on the plant site map in the DEIS, but I do not see any description of the nitrogen plant in the DEIS text. Please explain.

41-d

Yours,

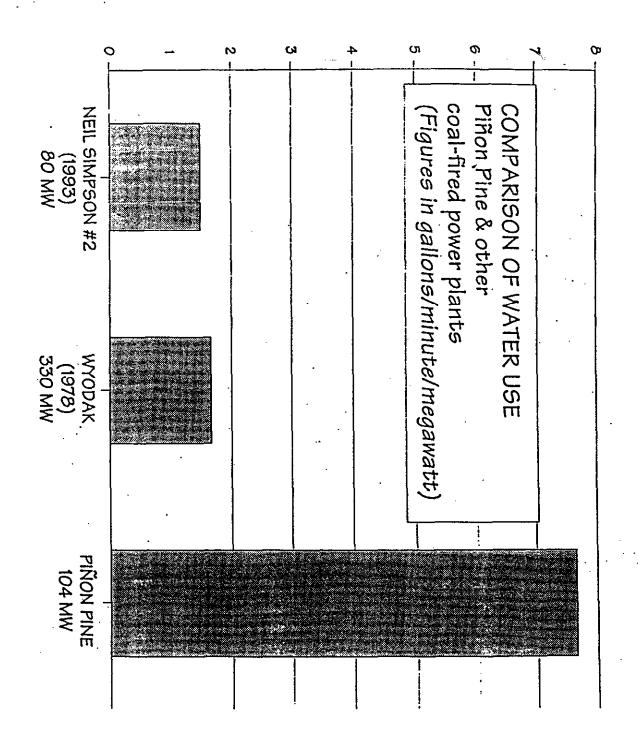
John Williams

cc: AL Franco, Local #549

Jack Motter

## REVISED CLEAN PLANT LIST COAL FIRED POWER PLANTS WITH LOWER NOX EMISSIONS THAN PINON PINE

FACILITY	(IN LB/ MMBTU) NOx LIMIT	- Remarks	
Proposed PINON PINE EMISSIONS	.158	Assuming 887 MMBTU/Hr 141 Lb/hr NOx emissions	
The state of Virginia Air Board's new policy requires this limit on new coal fired units.	.15	CONTACT 804-786-4867	
Panther Creek, Penn.	.15	SNCR, \$1800/ton cost effectiveness, Fluid Bed. CONTACT DOUG LESHER, 717-787-9256	
Birchwood Partners, Virginia	.15	Designed to meet .10 limit, SCR. 804-786-4867	
Applied Energy, Hawaii	.11	Fluid bed, SNCR, in attainment area, issued 1990. WILFRED NAGAMINE 808-586-4200	
Northhampton L.P., Pennsylvania	.10	Fluid bed. CONTACT DOUG LESHER, 717-787-9256	
Rio Bravo Refining, Ca.	.10	Fluid bed, issued 1986. TRY KEN PAXSON, 805-861-3682	
Mt. Poso, CA	.10	Fluid Bed, permit issued 1986. TRY KEN PAXSON, 805-861-3682	
Pyropower, California	.092	Fluid bed,issued 1986. KEN PAXSON, 805-861-3682	
East Providence, Cogeneration, RI	.09	SNCR, limit to be achieved after 2 years. DOUG MCVAY, 401-277-2808	
GWF California	.074	Fluid bed. TRY 415-771-6000 GWF has five units in California with this limit, issued 1988.	
GWF Kings County, California	.04	Fluid bed. TRY KEN PAXSON, 805- 861-3682	
Corn Products Stockton, CA	.04	Fluid bed. TRY SEYED SADREDIN, 209-468-3474	
Cogeneration Nat'l. Stockton, CA.	.04	Fluid bed. TRY SEYED SADREDIN, 209-468-3474	
BMCP, California	.039	Fluid bed, SNCR. TRY KEN PAXSON, 805-861-3682	



regression -

AUTIC: H

ENVIRONMENTAL QUALITY SERVICES \*\*\*\*\*FAX COVER\*\*\*\*

BUREAU OF INDIAN AFFAIRS PHOENIX AREA OFFICE BRANCH OF ENVIRONMENTAL QUALITY SERVICES P.O. BOX 10 ONE NORTH FIRST STREET PHOENIX, ARIZONA 85001

TELEPHONE: (602) 379-6750 (602) 379-6751

TELEFACSINILE: (602) 379-3833 (EQS)

(602) 379-3837 (Roads) (602) 379-4413 (Administration)

Dr. Sueellen Van Ooteghem  $\sqrt{2}$ 

ORGANIZATION: U.S. Department of Energy, Environment, Safety and Health Support Division

FROM: Amy Heuslein

TO:

SENDER: Amy Heuslein

DESCRIPTION and/or MESSAGE:

Comments on the Draft Environmental Impact Statement for the Proposed ' Pinon Pine Power Project: Tracy Station, Nevada.

NUMBER OF PAGES:

DATE SENT: 07/22/94

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METC: # 2



## United States Department of the Interior

BUREAU OF INDIAN AFFAIRS
PHOENIX AREA OFFICE
P.O. BOX 10
PHOENIX, ARIZONA 13001



Environmental Quality Services File 4301.14 WNA (602) 379-6750

JUL 22 1994

Dr. Sueellen Van Ooteghem
U.S. Department of Energy
Environment, Safety and Health
Support Division
Morgantown Energy Technology Center
P.O. Box 880
3610 Collins Ferry Road
Morgantown, WV 25607-0880

Re: Draft Environmental Impact Statement for the Proposed Pinon Pine Fower Project; Tracy Station, Nevada

Dear Ms. Van Ooteghem:

The Bureau of Indian Affairs (BIA) has reviewed the Draft Environmental Impact Statement (EIS) for the Proposed Pinon Pine Power Project; Tracy Station, Stoney County, Nevada (ER 94/425). The proposed 104 MW (gross) demonstration project located near Reno, Nevada, would be a cost-shared between the Department of Energy and the Sierra Pacific Power Company under the Clean Coal Technology Program.

Please find enclosed comments from our Western Nevada Agency (WNA) who oversees Indian trust lands in the region that your proposed project is planned. If you have any questions, please contact BIA Phoenix Area Environmental Quality Services at (602) 379-6750 or our WNA staff at (702) 887-3599.

Thank you for the opportunity to comment on this documentation.

Sincerely,

Mills Area Director

Enclosure

NO. 272

701

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United States Government

memorandum

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JUN 1994 RECEIVED PROESTS AREA OFFICE DETRONVENTAL

SERVICES SIZI M ELST)

E 14 -15/6 · 7-22-33 1: 2: 10(%) : BIO UND ON NEX → 3753833 Ø5/27/94 03:31 Post-It Fax Note 7671 MMY NW 50 DATE: June 27, 1994

PLY TO Superintendent, Western Nevada Agency

AMECT: Draft Environmental Impact Statement (DEIS) for the Proposed

Pinon Pine Power Project, Tracy Station, Storey County, Nevada (ER 94/425)

TO: Phoenix Area Director Attention: Amy Heuslein

TN OF:

We have reviewed the subject DEIS and offer the following comments:

P.3-21, par.3 - Satisfaction of the exercise of Orr Ditch water rights is only one of five requirements of the Truckee River Operating Agreement.

P.3-21, par.4 - The water-using interests identified include some Carson River as well as Truckee River water rights; Lahontan Valley wetland water rights acquired pursuant to Section 206 of P.L. 101-618 are Newlands Project rights; and there are more than four major interests (including the Pyramid Lake Paiute Tribe) that possess water rights in the Carson-Truckee basin.

P.3-22, par.3 - The Truckee River hydrology is misleading: Are the Pyramid Lake inflows historical averages or computer model results? Also, the phrase "to sustain Pyramid Lake" should be explained.

P.3-23, par.1 - The goal of the Cui-ui Recovery Plan is to increase the probability of persistence of the species to the point that it is no longer endangered or threatened and can be removed from the Federal endangered species list. Provision of flows to attract potential spawners, for spawning, egg incubation and development, and migration of spawners and larvae to Pyramid Lake are some of the objectives of the Recovery Plan.

P.3-64, par.1 - The interagency Cui-ui Recovery Team identified developed the Cui-ui Recovery Plan that was approved in 1992, but had no connection with the 1978 plan. Also, in the team affiliation enumeration "Bureau of Reclamation" should be replaced by "Bureau of Indian Affairs".

42-a

42-b

42-d

42-е

.171611661-

· METCER A

P.4-36, par.2 - The text is confusing. Diversions to the Truckee Canal are regulated by Newlands Project Operating Criteria and Procedures; "excess flow" could reach Pyramid Lake When the canal is diverting at less than capacity.

2.1. 1. t. t. 17. 2. 4 · 4.668 2.

42-

General (but related primarily to Pp. 4-50 and 6-1) - The DETS does not adequately address the impacts of reduced river flow to water quality and indigenous aquatic resources. The analysis and conclusions for endangered species are not sufficient in this regard because cui-ui spawning flows are only required in January-June (sometimes as late as July) and not every year. Furthermore, water is stored in Stampede Reservoir and Prosser Creek Reservoir to supplement lower Truckee River flows to promote cui-ui spawning primarily and Lahontan cutthroat trout migration secondarily. There is currently no vater right for Truckee River instream flows and, therefore, no protection for instream water quality or aquatic resources, particularly downstream from Derby Dam (which includes the Pyramid Lake Indian Reservation), during July-December of any year. Additionally, one of the objectives identified to assist in recovery of cui-ui is rehabilitation of the lower Truckee River riparian area; a portion of the water stored for cuiui and Lahontan cutthroat trout and currently used for spawning purposes may be required during summer and fall to establish and maintain riparian vegetation. Further reduction of instream flows as proposed in the DEIS could exacerbate conditions for aquatic and riparian life which are already inimical in many years.

42-g

The Western Nevada Agency should be added to DOE's contact and mailing lists.

42-h

Please contact Tom Strekal of my staff at 702/887-3599 if you have questions on this matter.

# Storeg County Building Bepartment

Post Office Box 526 Pirginia City, Pevada 89440

Phone: (702) 847-0966 Fax: (702) 847-0935

### FAX'S COVER LETTER

DATE: July 22, 1994	Fox: (304) 291-4403
PLEASE DELIVED THE POLICETING PAGES TO:	1,2/
NAME: Suellen Van Onteghem 7h	D
FROM: Dean Haymore	
TOTAL NUMBER OF PAGES (INCLUDING COVER PAGE):	_&
REMARKS:	
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IF YOU DO NOT RECEIVE ALL THE PAGES, PLEASE POSSIBLE AT (702) 847-0964. ASK FOR	CALL UB AS SOON AS

#### Storey County Building Department P.O. Box 526 Virginia City, Nevada 89440

July 22, 1994

Suellen Van Ooteghem, PhD Environmental Project Manager U.S. Department of Energy Morgantown Energy Technology Center P.O. Box 880 Morgantown, WV 26505

Re: The Proposed Pinon Pine Power Project for Storey County, Nevada

Dear Suellen Van Ooteghem:

As you had requested any comments on the proposed Pinon Pine Power Project, Storey County feels that the following concerns need to be addressed.

i) With a coal gasification power plant, and the expanding of cooling ponds, there is a potential of fog hazards in that little basin and moisture build up on Interstate 80.

2) No studies or concern so far on the closure of the power plant, mitigation problems and cost analysis for preciosure or closure within forty or fifty years. All utilities need to calculate the necessary funds for remediation of closure.

All other concerns of the environmental impact studies have been satisfactorily addressed, except those that were stated in the public hearings.

43-c

Sincerely,

Dean Haymore / O. L.

Dean Haymore Storey County Building Official

## FAX TRANSMISSION





ORGANIZATION:	Morgantown Energy Technology Center				
	<del></del>				
FAX No.	Area Code 304 Number 291-4403				
Verificat	ion: Area Code Number				
FROM: Name:	Jeanne Geselbracht  Office of Federal Activities U.S. Environmental Protection Agency Region 9 75 Hawthorne Street San Francisco, CA 94105				
~ ·					
-	Mail Stop: E-3				
	Phone No. Area Code 415 Number 744-1576				
	FAX No.: (415) 744-1598				
Date: July 23, 19	Verification (415) 744-1050 994				
PAGES: (Including	Cover)				
NOTES:					



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

75 Hawthorne Street San Francisco, Ca. 94105-3901

July 22, 1994

Dr. Suellen A. VanOoteghem Morgantown Energy Technology Center 3610 Collins Ferry Road Morgantown, WV 26507-0880

Dear Dr. VanOoteghem:

The U.S. Environmental Protection Agency (EPA) has reviewed the Draft Environmental Impact Statement (DEIS) for the Pinon Pine Power Project, Storey County, NV. Our review and comments are provided pursuant to the National Environmental Policy Act (NEPA), the Council on Environmental Quality's NEPA Implementation Regulations, and Clean Air Act §309.

The proposed Pinon Pine Power Project is a demonstration project for a 104-megawatt clean coal power plant to be costshared by the Department of Energy and Sierra Pacific Power Company. The proposal involves construction and operation of a coal-fired power plant using Integrated Gasification Combined-Cycle (IGCC) technology, which converts coal into clean gas, burns the gas in a combustion turbine to generate electricity, and then captures the heat to drive a steam turbine, which generates additional electricity. The project would be located at, and add service capacity to, Sierra Pacific's existing Tracy Power Station. Following a construction period of 26 months, the demonstration period would last 42 months. The demonstration is expected to generate valuable information for assessing plant reliability and performance and would be an important step leading to widespread commercial application of IGCC technology. If the demonstration is successful, the plant would continue to be operated in excess of twenty years. If it is not successful, the plant would be converted to burn natural gas or fuel oil.

EPA has rated this DEIS as EC-2 -- Environmental Concerns-Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Actions"). Our rating is based on our concerns regarding the project's potential impacts to air quality and the need for additional information regarding best available control technology, especially for particulates. We also have concerns regarding potential impacts to water quantity/quality and biological resources and recommend additional information in the Final Environmental Impact Statement (FEIS) regarding these issues.

44-a

Printed on Recycled Paper

2

We appreciate the opportunity to review this DEIS. Please send one copy of the FEIS to this office when it is officially filed with our Washington, D.C., office. If you have any questions, please call me at (415) 744-1574, or Jeanne Geselbracht at (415) 744-1576.

Sincerely,

David J. Farrel, Chief Environmental Review Section Office of Federal Activities

001574/94-181

cc: Dick Reavis, NDEP Greg Remer, NDEP

#### SUMMARY OF RATING DEFINITIONS AND FOLLOW-UP ACTION

#### Environmental Impact of the Action

#### LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal.

The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

#### PC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impact. EPA would like to work with the lead agency to reduce these impacts.

#### EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

#### EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of environmental quality, public health or welfare. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommend for referral to the Council on Environmental Quality (CEQ).

#### Adequacy of the Impact Statement

#### Category 1-Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

#### Category 2-Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the cavironment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

#### Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From: EPA Manual 1640, "Policy and Procedures for the Review of Federal Actions impacting the Environment."

Pinon Pine Power Project DEIS <u>EPA Comments -- July, 1994</u>

#### General Comments

We support the Department of Energy (DOE) in its efforts to develop clean coal technology. If successful, clear coal technology could be used commercially at coal-fired power plants throughout the United States and can go a long way in reducing environmental impacts, particularly those to air quality. If the Pinon Pine project proves successful, the IGCC technology would be continued at the Tracy Power Station in excess of twenty years following the demonstration period. Although we support the demonstration, in this particular application impacts to air quality and water quantity would be worse under the proposed alternative than under the no action alternative, which would involve expansion of the Tracy Power Station as a natural gas and fuel oil power plant. It is unclear from the DEIS whether other power generators whose future capacity upgrades would involve coal were considered for this demonstration. It appears that those geographical areas where coal is already being used would benefit more immediately from this project. The DEIS provided an explanation of the screening criteria used to select the Tracy Power Station from among Sierra Pacific's facilities. The FEIS should include a discussion of the screening process used to select Sierra Pacific from among other power companies which may have existing or proposed coal-fired facilities.

#### Air Quality

The projected emissions of particulate matter smaller than 10 microns (PM10) appear high for the size of the proposed project and would consume up to 65 percent of the Prevention of Significant Deterioration increment for the area. The specific sources of PM10 are listed in Table 4.1.2-2 in the DEIS; however specific projected emissions from each of those sources are not provided. It is also unclear whether best available control technologies are proposed for each source, particularly in the coal handling and processing facilities. The PEIS should provide the uncontrolled and controlled emission rates for each pollutant at each source, including grain loadings at each vent after controls, and describe the best available control technology proposed for each source.

Section 176(c) of the Clean Air Act (CAA) requires that Federal agencies must demonstrate that projects which they fund, approve, permit or authorize do not cause new violations of Federal air quality standards, aggravate existing violations of air quality standard, or delay timely attainment. More specifically, under CAA \$176(c), Federal agencies are prohibited from engaging in or

44-d

44-c

44-b

44-6

T-199

Pinon Pine Power Project BEIS EPA Comments -- July, 1994

supporting in any way actions or activities that do not conform to an applicable State Implementation Plan.

The FEIS should discuss the project's consistency with the CAA's conformity requirements. Should the Department of Energy determine that a conformity determination is necessary, we recommend that the draft conformity determination be circulated for public and inter-agency review prior to or simultaneous with issuance of the FEIS. If you have questions regarding conformity, you may wish to contact Mr. Bob Pallarino, EPA Region 9, Air and Toxics Division, at (415) 744-1212.

44-d (cont)

#### Water Quality

The FEIS should describe the double liner that would be used in the evaporation pond to prevent seepage of wastewater contaminants to groundwater and the Truckee River.

44-е

According to the DEIS (p. 4-39), the existing cooling pond can accommodate 43 acre-feet of runoff without overflowing. The DEIS should indicate the expected frequency of flood events which would produce 43 acre-feet of runoff in the collection area.

44\_f

The DEIS mentions but does not specify the operational difficulties which would occur should the switchyard be located outside of the 100-year floodplain. Because of the switchyard's potential impacts to flood storage, flood flow conveyance, and Truckee River water quality from sediment/contaminant releases, we recommend that you reconsider placing the switchyard outside of the 100-year floodplain.

44-g

We understand that the proposed project's water needs would be accommodated by existing water rights. However, EPA has extensive concerns regarding water supply and associated water quality issues in the Truckee River basin. We commend Sierra Pacific for incorporating several water conservation measures into the plant design and urge the company to pursue the conversion of the existing plant-bearing cooling water system to a closed cooling system to reduce groundwater consumption, as well as all other feasible measures to further reduce water consumption at the proposed plant. It is unclear whether the cooling system conversion proposal has been factored into the 1,004 acre-feet projected water use estimate. The FEIS should clarify this. The FEIS should also discuss all other potential opportunities for water conservation and, consistent with the Council on Environmental Quality's pollution prevention guidance, commit to those that are feasible.

44-h

Pinon Pine Power Project BEIS

EPA Companies -- July, 1994

#### Biological Resources

According to the DEIS (p. 4-39), the proposed evaporation pond could be toxic to aquatic life because of potentially low pH values and high concentrations of salts and dissolved metals. The DEIS also states that wildlife exclosures would be constructed around the pond to minimize wildlife exposure to the pond. The FEIS should discuss the specific mitigation measures that would be implemented to ensure protection of biological resources, including birds and other terrestrial wildlife. For example, we recommend that small mesh netting or other effective avian exclusion measures be seriously considered for use at the pond.

44-i

Water quality in the evaporation ponds would be periodically monitored by Sierra Pacific (DEIS, p. 4~51). The FEIS should provide further details regarding the monitoring program, including: (1) frequency of monitoring; (2) parameters to be monitored; (3) monitoring methods and protocols; (4) action levels; and (5) contingency measures when action levels are exceeded.

44-j

We recommend that, after construction activities are completed, all remaining disturbed areas at the project site be revegetated with native species to minimize the impact of the additional habitat loss that this proposal would involve. Revegetation efforts should include maintenance measures to discourage establishment of non-native species.

44-k

#### Pollution Prevention

We commend Sierra Pacific Power Company on its initiatives to minimize waste and substitute non-hazardous materials for hazardous materials where possible.

We agree with DOE that LASH (spent limestone and coal ash) should be reused if environmentally safe and if markets are available. The evaluation of LASH uses and environmental impacts should be included in the FEIS, along with any proposals for disposal or

reuse marketing that would be pursued based on the evaluation.

44



Dr. Suellen A. VanOoteghem U.S. Department of Energy Morgantown Energy Technology Center P.O. Box 880 Morgantown, West Virginia 26507-0880

RE: Pinon Pine Power Plant DEIS Comments

On behalf of the Truckee Carson Irrigation District, we have reviewed the water related portions of the Draft Environmental Impact Statement (DEIS), the Biological Assessment and other documents related to the proposed Pinon Pine Power Project (Project). Additionally, the State Engineer files related to the water rights associated with the Tracey Power Plant, the site of the expanded Project, have been reviewed. See enclosed memo of 9/16/92 from Sierra Pacific Power Company (Sierra) reporting annual water usage and a tabular summary of the water rights associated with the Tracey Power Plant. The rights of Sierra for "Industrial" purposes (evaporation, steam releases etc.) of which approximately 3500 acre feet are surface rights from the Truckee River and 600 acre feet are underground water from wells located near the River. The priorities of the surface water rights range from as early as 1865 to as late as 1897. The following water supply concerns are presented in respect to the impact that the Project may have upon downstream water users as well as the reliability of operation of the Project at design capacity during drought periods of time.

WATER SUPPLY MAY BE MARGINAL, ASSUMING ALL PRIORITIES ARE SERVED: According to Project planners, the water demand of the Project is estimated to increase by 1,005 acre feet/yr over the current use. (See page 1, last paragraph of the Biological Assessment.) In 1991, as per the Memo of 9/16/92 prepared by Sierra, the total use, assuming this proposed Project becomes operational, would increase to 3,796 acre feet (2491 acre feet + 1,005 acre feet). This demand of approximately 3,500 acre feet, approaches the total surface water rights of 3,500 acre feet that is held by Sierra. Although in the text of the Biological Assessment, the projected increase in water use of 1.005 acre is considered a "worst case" condition, the design of this Project may be marginally low, especially in view of the fact that the design and ultimate operation of this type of power plant may be prototype and/or experimental as adapted to this climate and environment. i.e. The actual water use may exceed the projected use.

WATER RIGHTS ARE MARGINAL DURING DROUGHT WHEN JUNIOR PRIORITIES CANNOT BE SERVED: e.g. If Certificates #6229 with a priority of 1890 for 130 acre feet and Certificate #8768 with a priority of 1897 for 948 acre feet, totalling 1,078 acre feet cannot be served, the net water right (surface & underground) would 4,100 - 1078 = 3,022 acre feet. This drought supply, assuming that 1890 and

46-a

46-b

46-с

junior priorities cannot be served, is less than the demand of about 3,500 acre feet per year. In view of the eighth year in drought that Western Nevada is experiencing, other junior priorities Sierra's may also not be served if the drought continues. If indeed the water supply for the proposed Project become limited, would the power production of the plant be reduced or would there be a tendency for over appropriation of the River and/or the underground (wells) diversion in order to maintain the Project's energy generation capacity? What is the operational schedule of the power plant if the water supply becomes limiting

46-c

WATER RIGHTS OF DOWNSTREAM WATER USERS MAY BE ADVERSELY IMPACTED DUE TO UNDERGROUND PUMPAGE OF SIERRA'S PROJECT WELLS: Upon consideration that the underground water #1 and #2 wells (Permits 28054 & 58990) are located very near (110' & 90', respectively) to the River channel and are completed in the alluvium, the probability of these wells taking water from the River is good. See Figure 4.1.1 Map of Tracey Facility from the DEIS. Based upon studies (WRD, 1991) conducted in the Truckee Meadows of Sierra's wells located near the River channel where it was demonstrated that the wells were primarily supplied by the River, it appears likely that these wells at Tracey may also be supplied by the River.

46-d

According to the DEIS, Well #1, the current production well, will be abandoned, Well #2 will be used as an observation well and proposed Well #3, located within a 1/4 mile from the present channel of the River will be drilled and used as the primary production well for the Project. The DEIS should address the impact that these current wells and the proposed well (Well#3) will have upon the River. If these wells do take water from the River, downstream users, including agricultural users and the fishery will be adversely impacted by the expansion of the power plant due to the increased water demand on the River.

46-е

PROJECT WATER DEMAND COMPUTATIONS ?: Although the DEIS shows the volume of the evaporation ponds, no area data of either the cooling ponds on the south side of the River or the gravel pits, located on the north side of the River is shown in order to estimate evaporation amounts from these open water surfaces. What water rights are associated with the evaporation from the gravel pits? Are these evaporation "rights" a part of Sierra's industrial decreed water rights assigned to the Power Plant? If so, the water supply for the Project may be further reduced in order to offset the evaporative waste from the gravel pits. Does Sierra or the Water Master measure the rate and total diversion into the Power Plant or is this estimated? Are totalizing meters in place to monitor water usage at the River make up station?

46-f

SUMMARY: The above concerns have not been adequately addressed in the DEIS for this Project. Until these considerations are further evaluated and/or explained, it appears that the expanded water demand of this Project has the potential to adversely impact water rights of downstream water right users, including the Truckee Carson Irrigation District and the fishery of the Lower Truckee River.

46-f (cont)

Thank you for your efforts in considering these water supply and demand questions in evaluating the impact of this power plant expansion.

46-g

Sincerely yours,

Clare N. Mahannah, P.E.

Enclosures as per text

Copies: Truckee Carson Irrigation District

-r-23-92 HED 15:19

SPPC. Rh. S DEPT

FAX NO. 702685.484

P. 18

Exhibit\_\_\_(DAS-14) Page 3 of 6

## SIERRA PACIFIC POWER COMPANY RESPONSE TO REQUEST FOR INFORMATION

DOCKET NO:

92-7001

SPONSORING WITNESS: Jack Motter 4000

REQUEST NO.:

OCA DR-9.5

RESPONDER: Charlie Brasheart

REQUESTOR:

Stransky

REVIEWED BY: Jack Motter

MANAGER\_

REQUEST DATE: 9/16/92

DIVISION VP

Question DR 9-5: Provide annual ground water and surface water usage data for existing Tracy units for the 1986 through 1992 period. Indicate how these amounts are appropriated under the water permits and/or certificates requested in OCA DR OS-3.

Response DR 9-5: The ground water and surface water used at Tracy was not metered during the period cited, since no such metering is required under existing permits. Based on the station generation and a conservative assumption that the units would consume less than one (1) gallon per kwh generated, the consumption is estimated not to have exceeded:

1986 - 327 acre feet

1987 - 258 acre feet

1988 - 982 scre feet

1989 - 1955 acre feet

1990 - 2068 acre feet

1991 - 2491 acre feet

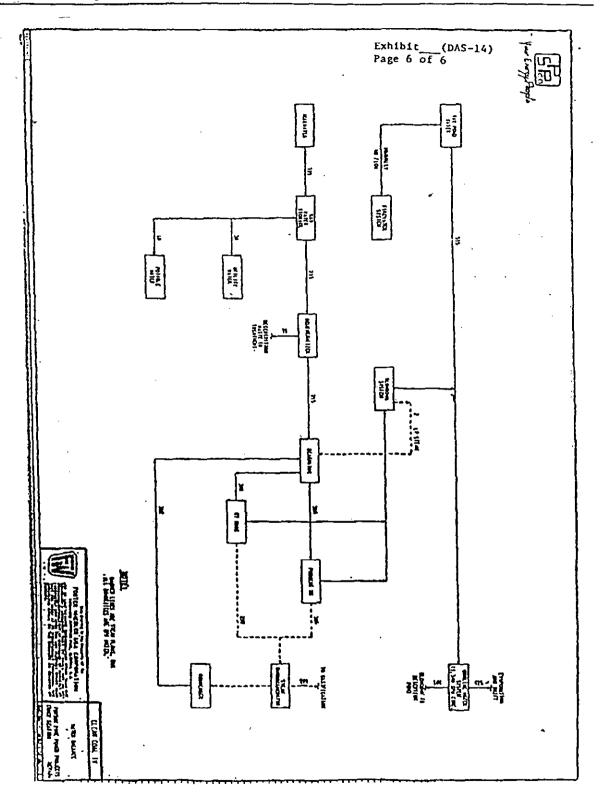
1992 - 1925 acre feet

Our consumptive water rights at Tracy station for industrial use are:

Ground water - 600 acre feet

River -3.500.3 acre feet

Total 4,100.3 acrc feet



I-208 September 1994

P-23-92 WED 15:16

SPPC. RATES DEPT

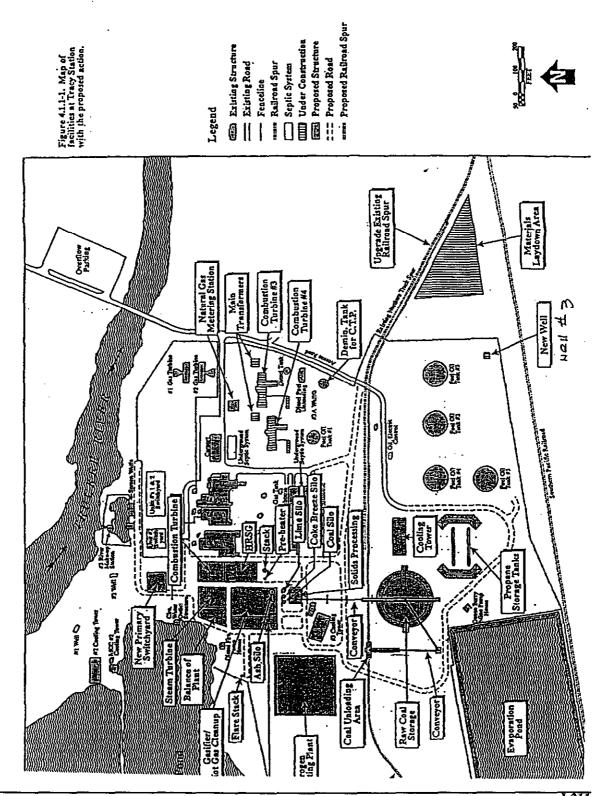
FAX NO. 7026894484

P. 14

Exhibit (DAS-14)
Page 5 of 6

can be recycled, and at least part of the "utility water" can be replaced with pond water. More fundamentally, there is no inherent reason why pond water cannot be substituted for well water in any of the uses proposed in the preliminary water balance. For example, we are evaluating the use of reverse osmosis to split the cooling water flow stream into high purity makeup water for the demineralizers and a concentrated brine feed to the evaporation pond. This would reduce total ground water consumption without increasing the surface water consumption and reduce chemical costs for the demineralyzer and the cost of the evaporation pond with the trade off of the capital and operating expense of the reverse osmosis unit.

In summary, we have base initial estimates on highest, "worst case" estimates of cooling water use for conservatism, but continue to do engineering strudies o decrease consuption wherever practical.



I-211 September 1994

MAR-16-1994 (6:21 MURRAY BURNSSKIENLEN

MAN TO THE TANK 916 456 0253 P.02

#### TRACY POWER PLANT TRUCKEE RIVER SURFACE WATER RIGHTS

APPLICATION E	CERTIFICATE	PRIORITY DATE	ACTULISTICS STAG	CERTIFICATE DATE	Us€ "	AKKUAL (AG.FC.)	LEWES
19881	6572	04/01/1874	09/16/1960	03/11/1968	Industrial	336.00	Orr Disch Claim No. 629
19883	6229	01/01/1890	01/18/1961	03/22/1967	Industrial	130.00	Orr Ditch Claim
19884	6230	05/31/1869	01/18/1961	03/22/1967	Industrial	699.30	Orr Ditch Claim No. 647
28192	8768	06/26/1897	03/24/1961	05/21/1976	Industrial	948.00	Orr Ditch Claim No. 14
29213	9199	05/01/1880	08/27/1975	02/17/1978	Industrial	301.00	Orr Ditch Claim
29214	9200	05/01/1880	08/27/1975	02/17/1978	industrial	185.00	Orr Ditch Claim No. 640
29215	9201	10/01/1865	08/27/1975	02/17/1978	Industrial	\$76.00	Orr Disch Claim No. 642
29216	9202	01/01/1866	08/27/1975	02/17/1976	Industrial	322.00	Orr Oftch Claim No. 645
					TOTAL	3,500.30	

CARTEROLE TOP THOS

: 7-20-94 : 7:07(4)

™ for see 2022.

"MEC:WY

# Comments due to DOE by July 23, 1994

EIS for the proposed Piñon Pi space below. Your cards can l of Energy's Environmental Pro	sterested in obtaining your written comments on issues that are addressed in the Draj ne Power Project in Storey County, Nevada. Please provide your comments in the be deposited in the boxes provided at the public hearing or mailed to the Department ofect Manager. Sea Pacific's EIS on Pinon Pino:
l. Did the EIS add	ress the environmental damage resulting from the mining of
coal in adjoining state	es, the transportation of many tons of coal weekly to the plan
i.e. what environmenta	l damage is created by the train's emissions to haul the coal?
	•
2. Did the ZIS add	ress & possible accident whereby the train might dump coal
	and endanger the QUI fish or the Pyramid Lake cut throat
	re on the endangered species list?
NAME.	Larry Beck
NAME: ADDRESS:	P.O. Box 11130
1001000	



P.O. BOX 5339 RENO, NY 89513 702-627-4300 FAX 702 627-4300

July 25, 1994

P.O. BOX 1661 LAS VEGAS, NV 89125 EAX 702.708.4466

Dr. Suellen A Van Ooteghem U.S. Department of Energy

EGARO OF DIRECTORS

Morgantown Energy Technology Center

PEG BEAH Lee Vegas, MV P. O. Box 880

BARBARA ORENTS

Morgantown, WV 26505

Lee Veges, NV JULIE DE WITT

Dear Dr. Van Ooteghem

Dayton, KV JO ANNE GARRETT

Baker, NV TRACIE LINDEMAN

Fellon, NV

Thank you for your consideration of the comments of Citizen Alert. I realize this report is too late for incorporation into the public hearing record, but I hope it can still be read and considered. While setting up the pages to print, I accidently deleted the first set of comments. So now I am rewriting the comments.

HARGARET NORMAN Tuecerore, NY

> SUBAN ORR Secrements, CA

> > Sincerely.

RAVEH Las Voges, NV

BILL ROSSE Austin, NV

BIAFE

CHRIS BROWN Executive Director M. Lee Dazey

Northern Nevada Coordinator

MLEE DAZEY **Hormern Neveds Coordinator** 

RICHARD NIELSON othern Nevede Admin.Asst. Yolunber Coordinator

FIELDING M. McGEHEE III Membership/Publications

VIRGINIA BANCHEZ Director **Native American Program** 

HEIOR BLACKEYE Organizer
Native American Program



P.O. BOX 5339 RENO, NV 88513 702-677-630 FALTOS 607-639

P.O. BOX 1681 LAS VEGAS, NY 89125 702794462 FAX 702794428

SOARO OF DIRECTORS

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BLL ROSSE Auetin, MY

EXACUTIVE DIRECTOR

MLEE DAZEY Northern Hernda Coordinator

RICHARD NIELSON "Suthern Nevada Admin Asal Yolunteer Coordinator

FIELDING IL MCGEHEE III Membership/Publications

VIRGINA SAHCHEZ Director Hatter American Program

HEIDI BLACKEYE Organizer Keliwa American Program July 25, 1994

Dr. Suellen A. Van Ooteghem, U.S. Department of Energy

Morgantown Energy Technology Center

P.O. Box 880

Morgantown, WV 26505

Dear Dr. Van Ooteghem,

As a general overview, Citizen Alert would like to raise the point that while the Integrated Gasification Combined Cycle demonstrates a cleaner coal technology, it runs counter to the national goal for meeting global warming objectives. If natural gas-fired power plants can generate the same electricity with fewer emissions (as stated on p. vii), why build the coal-fired plants?

#### <u>AIR</u>

Washoe County doesn't meet federal ozone standards and is designated as nonattainment area for CO, PM10, and NO2. We are concerned with how increased levels of NO2, a contributor to the destruction of ozone, will affect our request for redesignation back to attainment levels.

How has the DEIS addressed growth in the Truckee Meadows and the resultant pollution from increased auto emissions and its affect on the significance levels of CO from the Pinon Pine Power Project? It's possible in the near future that even Clean Coal Technology will be too dirty.

Why are CO2 emissions not included in this analysis? Why are DOE and SPPCo. pursuing this phase of the CCT Program when technologies for removing CO2 from coal are not part of the technology?

48-d

48-с

48-a

48-ь

We request that you consider Selective Catalytic Reduction, SCR, which could reduce emission levels up to ninety percent.	48-e .
SOIL AND VEGETATION	
It is stated that "NOX emissions from the facility when considered in the absence of other air pollutants would not adversely affect vegetation." Because the pollutants do not exist in isolation, we can only assume the effects upon the soil to be greater.	48-f
The amounts of sulfur and oxides of nitrogen that are not coming out of the stack, will remain in the coal ash waste. The DEIS out of the stack, will remain in the coal ash waste. The DEIS states that: "Options for disposal of LASH are being investigated". It is likely that the high-volume ash waste will be more toxic than most coal-fired power plants' ash waste (because less toxic wastes are coming out of the stack). Until all disposal options are fully understood, this project should not move forward.	48-g
WATER	
Although SPPCo. has adequate water rights to operate a water-cooled system for Pinon Project, what kind of protection to the Pyramid Lake Paiute Tribe and the endangered cui-ui in the event of an extended drought, will the Pinon Project ensure? We suggest that the project consider the more expensive air-cooled technology.	48-h
The effects of acid rain along river corridors will have an effect upon this fragile ecosystem. Has the DOE evaluated the effects on the fish and the vegetation on which they thrive?	48-i
WASTE STREAMS	
How are the low level wastes produced during equipment maintenance and water purification (such as metal and boiler cleaning wastes) intended to be treated and discharged?	48-j
ENVIRONMENTAL RISK	1
How is environmental risk especially regarding accidental or unmonitored leakage and discharge of high or low-volume waste, coal pile runoff, or other sources of leachate into surface waters treated in the DEIS?	48-k

RCV BY : DOE

: 7-26-94 1 1349/41 :

. To the state of the state of

How does the DES include Nevada Externalities Regulation that costs from environmental impacts and health care must be figured into the cost of new projects?

48-1

### NO-ACTION ALTERNATIVE

In 2.2.2 it says "under the no-action alternative, DOE would not provide cost-shared funding support for the proposed Pinon Pine Power Project, and the advanced KRW gasification technology with hot gas cleanup probably would not be demonstrated in Reno, NV, or elsewhere because there are no similar proposals in the CCT Program." Why is this true? It fails to be explained in the following sentences, "The opportunity to demonstrate this technology likely would be lost. Commercialization of the proposed technology would be delayed or not occur at all because utilities and private sector companies would be inclined to choose known and demonstrated technologies rather than new, unproven advancements." This statement presupposes that the Tracy Station Power Plant is the best place for the demonstration IGCC project.

48-m

If the primary goal of the CCT Program is to demonstrate cleaner coal-burning and alleviate pollution problems from coal utilization, as stated on 1.8, then why not give more serious consideration to a demonstration project at Valmy Power Station? It has been burning coal since 1979 using unclean technology. We feel that not enough consideration was given to Valmy. A burden on the county seems a weak argument, since Humboldt County is one of the richest with tax revenues from mining the Carlin Trend. Additionally, it states that there is no gas pipeline nearby. The Paiute Pipeline gas company runs a pipeline 40 miles away from Valmy. Perhaps SPPCo. could trade gas from a newly constructed Tuscarora Pipeline with the Paiute Pipeline.

48-n

Another impetus to burning coal at Valmy is cost of transportation of coal. Was the cost figured into the statement in 1.3.3. saying, "that an additional attribute associated with the proposed Pinon Pine Power Project would be that coal is forecasted to remain substantially cheaper than natural gas as a fuel for generation"?

48-o

Has the Pinon Project been evaluated in terms of fulfilling baseload need with alternative projects, such as its proposed merger with Washington Power Co.? Why is the reasonable course of action for

48-r

KUL DI-1841 : 1:44141 :

ARETC:# a

SPPCo. the construction of essentially the same project at the same site, but without the capability of using coal fuel, when there are several projects that SPPCo. is pursuing which may eliminate the need for the Pinon baseload station plan?

48-p (cont)

### CONCLUSION

The reliance upon renewables is more in keeping with our national goals. Nevada could expand upon its geothermal capacity. Has SPPCo. looked at expanding its use of geothermal beyond the 11% that it currently uses?

48-q

It is the view of Citizen Alert that the CCT program's primary goal is to promote the use of coal rather than clean up the air. As such, the project should not go forward at Tracy Station.

: ncerely,

M. Lee Dazey

Northern Nevada Coordinator

BOU MILLER Geograps STATE OF NEVADA

JOHN P. COMEAUX



## DEPARTMENT OF ADMINISTRATION

Capitol Complex
Carson City, Nevada 89710
Fax (702) 687-3983
(702) 687-4065

July 21, 1994

Dr. Suellen A. Van Ooteghem Environmental Project Manager Morgantown Energy Technology Center 3610 Collins Ferry Road Morgantown, WV 26507-0880

Re: SAI NV # 943000119

Project: DEIS--Pinon Pine Power Project

Dear Ms. Van Ooteghem:

Attached are the comments from the Nevada Divisions of Environmental Protection, Historic Preservation, and Economic Development concerning the above referenced project. The Nevada Division of Water Resources responded directly to you with their comments. These remarks constitute the State Clearinghouse review of this proposal as per Executive Order 12372. Please address these comments or concerns in your final decision.

49-a

Sincerely,

Julie Butler

· Julie Butler

Nevada State Clearinghouse/SPOC

JB/jb Enclosures L. IL DOUGIUN

Administration: (702) 667-4670 Fax 687-5856

1,4

Air Quality
Mining Regulation and Reclamation
Water Quality Planning
Water Poliution Control

STATE OF NEVADA HOR MILLER Convenier



PETER G. MORROS

Fax (702) 885-0868 TOD 642-4676

Waste Management Corrective Actions Federal Facilities

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

### DIVISION OF ENVIRONMENTAL PROTECTION

Capitol Complex 333 W. Nye Lane Carson City, Nevada 89710

June 27, 1994

JUR & 8 1994

### CLEARINGHOUSE COMMENTS

NDEP # 94-110 SAI NV # 94300119

TITLE: USDOE - Draft EIS for Pinon Pine Gasification Cycle at Tracy

The Division of Environmental Protection has reviewed the aforementioned State Clearinghouse item and has the following comments:

The Bureau of Air Quality is currently reviewing a PSD application submitted by Sierra Pacific Power Co. Several aspects of the plant have changed since the EIS was initially prepared, including the location of the proposed unit, stack height, the meteorological data, etc.

50-a

David R. Cowperthwaite Clearinghouse Coordinator

Division of Environmental Protection

### COMMISSION ON ECONOMIC DEVELOPMENT

### STATE OF NEVADA

#### CAPITOL COMPLEX

5151 S. Carson Street • 4th Floor • Carson City, NV 89710
Phone (702) 1827-4325 • Fax (702) 607-4450

### M EMO-RANDUM

TO:

Nevada State Clearinghouse

FROM:

Tim Carlson, Executive Director

DATE:

July 20, 1994

Subject:

RE: Nevada SAI #943000119 Project: Draft EIS--Pinon

Pine Power Project, Tracy Station

The intent of this memo is to convey my support regarding the Draft Environmental Impact Statement for the proposed Pinon Pine Power Project. As the Executive Director of the Commission on Economic Development, I view this project as a positive step in the enhancement of economic development in Northern Nevada.

The development of this innovative and technologically advanced power plant demonstrates Sierra Pacific's desire to provide continued reliable service at cost-effective measures yet, remaining environmentally conscious. All preliminary indications suggest that Sierra Pacific and DOE have taken the necessary steps to ensure the preservation of the environment by thoroughly evaluating all elements that draw concern. Careful planning and a strong commitment to the protection of the environment must be maintained for continued success of this project.

My staff and I realize the importance of this project for the surrounding communities and Sierra Pacific Power Company. We will continue to support projects that enhance economic development and renders a positive impact on the State of Nevada.

If you have any questions or need additional comments, please do not hesitate to contact me at (702) 687-4325.

Bob Miller, Governor

Lieutenant Governor Sue Wagner, Chair

Commissioners:

Jim Cashman, Berlyn Miller, Lynn Atcheson, Mike Sheppard, Rafaet (Ray) Vega, Keith Lee

Tim Carlson, Executive Director

51-a



# STATE OF NEVADA DEPARTMENT OF MUSEUMS, LIBRARY AND ARTS STATE HISTORIC PRESERVATION OFFICE

Capitol Complex 100 Stewart Street Carson City, Nevada 89710

JOAN G. KERSCHNER
Department Director

RONALD M. JAMES
State Historic Prospression Officer

June 7, 1994

Dr. Jan K. Wachter Environment, Safety and Health Program Support Division Morgantown Energy Technology Center P.O. Box 880 Collins Ferry Road Morgantown, WV 26507-0880

RE: DEIS - Piñon Pine Power Project, Tracy Station, Washoe Co., Nevada.

Dear Dr. Wachter:

The Nevada State Historic Preservation Office (SHPO) reviewed the subject draft environmental impact statement. The document adequately considers cultural resources as per the National Environmental Policy Act of 1969. Our only comment is a recommendation to remove the Historic Properties Inventory and Archaeological Site Evaluation from public access in the reading rooms. The Archaeological Resources Protection Act of 1979 exempts archaeological site location and content information from the Freedom of Information Act due to the ongoing problem of site vandalism.

52-a

Please contact me at (702) 687-6362 if you have any questions concerning this correspondence.

Sincerely,

/s/ E. M. Hattori

Eugene M. Hattori Archaeologist

## Comments due to DOE by July 23, 1994

The Department of Energy is interested in obtaining your written comments on issues that are addressed in the Draft EIS for the proposed Pitton Pine Power Project in Storey County, Nevada. Please provide your comments in the space below. Your cards can be deposited in the boxes provided at the public hearing or mailed to the Department of Energy's Environmental Project Manager.

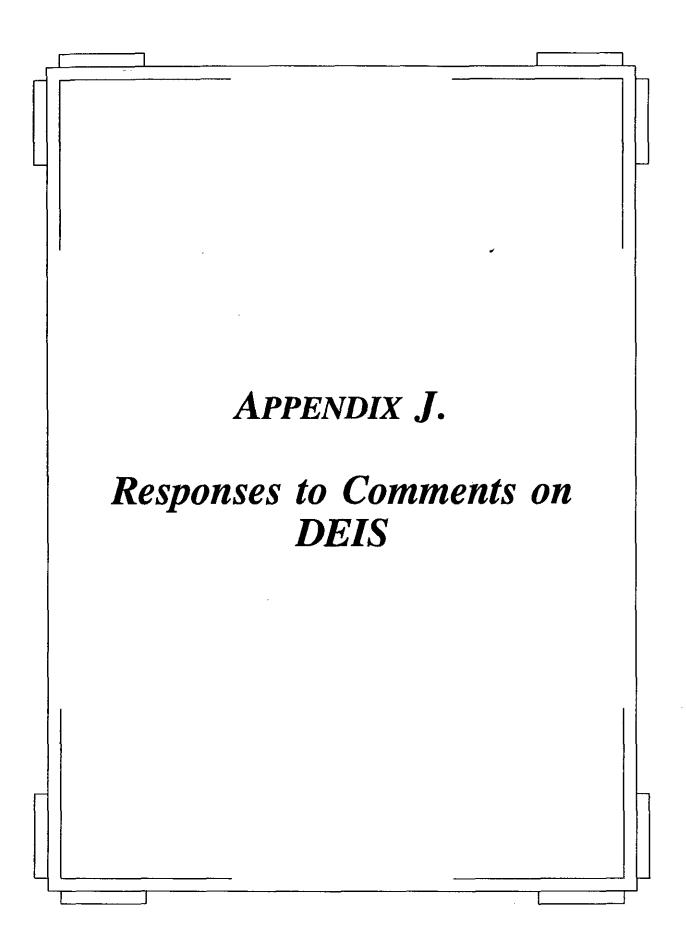
I regret that I was unable to attend your last meeting, and that this raply is so tardy. My 90-years, sometimes prevents my ability to do all that I'd like, and my secretary has been incapacitated for several weeks. I do approve of your plan to utilize a process that converts coal to gass, and have faith in your good business practices.

NAME:

ADDRESS:

M Sr Margaret McCarran
McCarran Banch 180-E
Sparks NV 89411

53-a



## APPENDIX J: RESPONSES TO COMMENTS ON DEIS

## Introduction

The following appendix presents both oral and written comments received on the DEIS, and the Department of Energy's responses to those comments. Comments provided in Appendix I have been reprinted to facilitate readability. Only those portions of the comment relevant to the issue have been reproduced; the entire comment is presented in Appendix I. This appendix is intended to be user-friendly and facilitate browsing as evident by the key subjects that appear in the right hand column. Comments appear in italics in the left hand column. A response follows each comment. A complete list of commenters is provided below.

## **List of Commenters**

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4	Monte Martin Environmental Director Pyramid Lake Paiute Indian Tribe	J-12
5	Mervin Wright, Jr. Water Resources Director Pyramid Lake Paiute Indian Tribe	J-22
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8	Robert Martinez	J-32
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20	Paul Stieger	J-58
21	George Foster	J-58
22	Dean Haymore Storey County Building Official and Planning Administrate	<b>J-59</b> or
23	Bill Hollis FOXX Systems	J-61
24	Mark LeBlanc	J-62
25	Bill Hollis	J-62

Final	Environmental	Impact	Statement

26	Brad Bryant	J-62
27	Peter S. Tuttus Storey County Planning Commission Written Comment	J-63
28	George Foster Plumbers and Pipefitters Local #350 Written Comment	J-63
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29	John Paul Williams Boilermakers Union Local 549	J-63
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### COMMENTS AND RESPONSES

- 1: Norman Harry, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94
- 1-a .... You are talking about burning 800 ton of coal per day. Would there be a specific method of transportation or transporting this coal? I'm sure it would be the railways; right?

COAL TRANSPORTATION

**RESPONSE:** As discussed in the Draft and Final EIS (section 2.1.3), coal would be delivered by rail approximately once a week in unit trains consisting of approximately 84 railcars, each having a capacity of between 100 and 110 tons.

1-b Was there any concerns addressing any type of spill? How would a spill, say the coal cars, affect the river or the water quality?....I was wondering if there was any type of contingency plan to address such a spill or if it had any impact on water quality.

COAL SPILLS CONTINGENCY PLANS WATER QUALITY

RESPONSE: Southern Pacific Railroad would be responsible for cleaning up any spill that occurred during transport, and has a contingency plan on file; contacts with spill cleanup companies are maintained along its tracks. Disposal Control Services, a spill cleanup contractor located in Sparks, NV (22.5 km (14 miles) west of the proposed project site), would be able to respond immediately to a spill. If an accident occurred during working hours, Southern Pacific Railroad would be responsible for notifying the Washoe County Health Department, the Nevada Health Department, the Nevada Division of Environmental Protection - Water Pollution Bureau, the Pyramid Lake Paiute Indian Tribe, the Nevada Department of Wildlife, the U.S. Fish and Wildlife Service, and the Truckee-Carson Irrigation District; if an accident occurred west of Tracy Station, the railroad company would also notify SPPCo. If an accident occurred during non-working hours, Southern Pacific would notify the Nevada Division of Environmental Management, which would be responsible for notifying the other parties. SPPCo. would be responsible for any spill that occurred on its property, but since the railroad spur would be located away from the Truckee River, it is unlikely that any coal would enter the water. This information has been added to the Final EIS (see section 4.1.5.3).

As mentioned in section 4.1.5.3 of the Draft and Final EIS, between 1988 and 1993 (the period for which records were available), there were four train incidents in the affected area, all of which were in the Reno/Sparks metropolitan area and more than 2.4 km (1.5) miles from the nearest point of the Truckee River. Alan Davis from the Pennsylvania State University Coal Research Section stated that coal cleaning plants in the western United States have dumped coal in streams, and the coal was recoverable. If coal were to spill into the Truckee River, iron and sulfate from the coal could be leached if the coal had been oxidized prior to shipping; if fresh, there would be little leaching. It is expected that if an accident were to occur, Southern Pacific Railroad's contractor would be able to clean up any spill before an adverse impact to the Truckee River would occur.

# 2: Albert John, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

2-a ....On solid waste, after it goes through this gasifier, SOLID WASTE DISPOSAL where is that stuff taken or is it like a landfill, and what area around there?

**RESPONSE:** As discussed in the Draft and Final EIS (section 2.1.3), cooled solid waste (LASH) would be conveyed to the solid waste storage silo, which would be designed to have a 5-day storage capacity. The current plan would be to transport the LASH by truck for disposal at the Lockwood landfill. The Draft EIS also discusses (Appendix G) various reuse options for the LASH. [This information has been moved to section 4.3.2 of the Final EIS.] Other solid wastes discussed in the Draft and Final EIS (section 4.1.10) include barrier filters and spent sorbent from the external hot gas desulfurization vessels. Analytical testing for hazardous constituents would be performed on the barrier filters and if found to be hazardous, they would be disposed of at an approved hazardous waste landfill.

2-b Is there any of this type of operation in place now IGCC OPERATIONS anywhere across in these other ones?... Well, the combined... Where are they located at?

RESPONSE: Currently, no identical Integrated Gasification Combined-Cycle (IGCC) plant is operating with the same type of limestone and coal mixture as the proposed Piñon Pine Power Project. On a smaller scale (25 ton-per-day), the proposed plant's KRW gasification and hot gas cleanup components were successfully demonstrated for more than a decade in Waltz Mill, Pennsylvania. There are, however, five other IGCC projects in the Clean Coal Technology program that are planned. Each differs in technology to a degree that requires their own demonstration (two plants will be started before the

proposed Piñon Pine Power Project would be built). In addition, another plant in Plaquemine, Louisiana, operates at one hundred megawatts that, although not an IGCC, does demonstrate the gasification technology.

2-c What are the dangers then if something went wrong with this? What type of dangers would there be, like an explosion or something like that within this gasifier?

GASIFIER EXPLOSION HAZARDS

RESPONSE: Potential hazards associated with the operation of the proposed project would be addressed through a variety of technical innovations and control measures designed to mitigate potential health and safety impacts to facility workers and the public (see section 4.3 of the Final EIS). The danger from a gasifier explosion would be minimized through use of a variety of standard operating procedures and safety devices, including a flare system (see section 2.1.3 of the Draft and Final EIS) designed to combust coal gas from the gasifier in the event of a gasifier upset. The flare would be capable of combusting the maximum amount of gas contained in the gasifier at any given time. From an environmental impact standpoint, the resulting air emissions from an upset requiring flaring of the gasifier output would be a larger concern than the potential for explosions. Under normal conditions, air emissions from the flare are only anticipated for short durations (48 hours) on an infrequent basis (3-4 times per year). Any situations requiring flaring of longer duration or greater frequency potentially could cause air emissions standards to be violated.

Another potential explosion source would be a leak from liquid propane storage; propane is proposed for use as an alternate fuel source in the combustion turbine. Two 100,000 gallon storage tanks would be located on-site. The tanks would be oriented, and earthen berms constructed, to minimize damage in the event of tank failure. The on-site storage of liquid propane would be in accordance with applicable National Fire Protection Association requirements.

An "act of God" such as a lightning strike, or an earthquake could create dangerous conditions at the Tracy Station because of building collapse or fire, and possible exposure to electrical current from fallen or broken power lines. The effects of a natural occurrence such as an earthquake are unpredictable. However, it is likely that the serious adverse effects from a building collapse or fire would be restricted primarily, if not entirely, to the Tracy Station property.

Other industrial-type accidents are also possible given the volume and type of chemicals that would be used and stored on-site. For example (as with many large industrial operations), a variety of chemicals, (e.g., acids, bases, and solvents) are used to clean equipment and to control the release of pollutant emissions into the environment. Accidental releases of these chemicals could pose a possible threat to worker safety and the environment. To minimize such threats, SPPCo. has developed a Chemical Emergency Response Plan that provides procedures for incidents such as fires, spills, leaks, vapor releases, and explosions, including operations for exposure control, evacuation, first aid procedures, and personal protective clothing and emergency equipment. Company policy, individual responsibilities, emergency response procedures, and information on chemical hazards are included in the Plan, which is available for review at SPPCo. offices at Tracy Station. SPPCo. also maintains a readily accessible file of Material Safety Data Sheets (MSDS) on all chemicals and substances used throughout the company. These files are available to all employees in compliance with "right-to-know" regulations. The files contain a list of the hazards of and precautions to take when working with each substance. Consequently, while it may not be possible to prevent an accidental release, technological controls, standard operating procedures, and corporate policies would be implemented to reduce the likelihood of an accident occurring and minimize resulting impacts.

Information on the technical risks associated with the proposed project, including a discussion on gasification island upsets is provided in a subsequent comment. Please see Response to Comment 4-a.

2-d I had one more question. I'm not too sure on that, those ponds they have over there, the settling ponds. That is to cool the water; right? I mean, to cool whatever the power they create; right? And they run it down there just to cool stuff. And this one here doesn't have anything to do with that then, drawing any water, or does it?... You know the settling ponds that are out there. How are they going to be used inside this system, or are they?

COOLING PONDS

**RESPONSE:** The cooling pond is described in section 3.4.2 of the Draft and Final EIS. This large pond at Tracy is used for cooling in existing Units 1 and 2 and to supply water for the fire protection system. The cooling pond would not be used for heat rejection for the proposed Piñon Pine Power Project.

# 3: Carolyn Harry, Tribal Secretary, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

3-a .... You said each plant is uniquely different by a degree. What makes the Tracy Plant an ideal spot? Why has this been chosen as a site? Is there anything specific that is advantageous about locating it here?

ALTERNATIVE SITES

RESPONSE: Section 2.2.1 of the Draft and the Final EIS address the site selection process and its limitations. Because DOE is not the owner-operator of the proposed project, it is the responsibility of the industrial participant, SPPCo., to review and evaluate reasonable site alternatives for the proposed project. Originally SPPCo, screened several sites. Of these, SPPCo, conducted a preliminary site selection of four possible locations for the IGCC project: (1) Fort Churchill Power Plant; (2) North Valmy Power Plant; (3) Tracy Power Station; and (4) Carlin, Nevada. The Carlin area was eliminated from further analysis because it lacked the necessary features. Based on parameters such as water resources; air quality and meteorology; terrestrial and aquatic ecology; and land use, the Valmy plant scored slightly higher (32/40) for the environmental portion of the review than the Tracy plant (30/40). However, SPPCo. also subjectively ranked economic and reliability data for each site based on natural gas supply (proximity to gas transmission lines and availability of capacity on the lines); coal handling (proximity of rail lines and any existing coal handling facilities); oil storage (existence of available tank); waste storage (availability of land and permits); existing control room; existing substation; support facilities; transmission considerations; and construction costs. Based on these criteria, the Tracy site scored considerably higher (Tracy 76/90; Valmy 52/90) because the interface between the proposed gasification project and existing facilities would be better at the Tracy site; the site was originally designed for the possibility of converting to coal; the Tracy Power Station has three units operated by two control rooms; there is excellent access by railroad and highway; there are sufficient existing water rights and resources to accommodate the proposed project; the site has existing natural gas capabilities; the site is closest to Reno and has the largest labor pool and lowest construction and operating costs; and the site has adequate existing transmission capabilities. DOE independently reviewed SPPCo.'s project siting evaluation process, and concluded that it reasonably focused the alternatives to be considered in this EIS because there are no other sites that meet both DOE's purposes and the applicant's purposes.

3-b I have another question. It is going to take 80 tons of coal to operate a day. That is what you would be burning a day?... What is that equivalent to on a daily

COAL AMOUNT

basis, what is that equivalent to in railroad cars or either trucks in transportation?

**RESPONSE:** As described in the Draft and Final EIS (section 2.1.3), the proposed Piñon Pine Power Project would consume approximately 800 tons of coal per day. Each railcar would carry between 100-110 tons. Thus, the plant would use approximately eight railcars of coal per day. Approximately once a week, a unit train consisting of about 84 railcars would deliver the coal.

# 4: Monte Martin, Environmental Director, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

4-a I'm the environmental director here at Pyramid Lake, and I'd like to speak I guess officially first and then unofficially as a resident of a nearby community. We have quite a few concerns. I think one, you are talking about demonstration projects where the reliability is not proven. As far as I have been able to determine, things that are called upsets, which means something doesn't go quite right, there is no protection. So during these upsets, you find that pollution increases drastically, magnitudes. So that was one concern.

RELIABILITY UPSETS

RESPONSE: DOE determined that the proposed project's overall technical risk would be moderate upon completion of its fact finding process and detailed evaluation. The degree of technical risk would be mitigated by the experience of the designer of the KRW gasification process (M.W. Kellogg) and the knowledge gained from the operation of the KRW Energy Systems process development unit at Waltz Mill, Pennsylvania, during the 1970s and 1980s. The KRW gasifier that would be used for the proposed Piñon Pine Power Project was tested at the pilot scale for more than 10 years. During this period, more than 13,000 hours of operation were accumulated on the KRW process development unit, generating much data on a variety of feedstocks and operating conditions. However, DOE recognized that technical uncertainties would exist with the proposed project, especially with regard to scale up of the gasifier, performance of the hot gas cleanup system, and overall IGCC plant integration. Therefore, data and models for scale-up design were developed through operation of the Waltz Mill Process Development Unit (a scale-up facility) that successfully demonstrated the air-blown fluidized bed gasification process on a wide variety of coals, and included tests with in-bed desulfurization, ceramic filters, and external hot gas desulfurization. Although the components and systems have been developed and tested previously, the proposed project would represent the first fully integrated IGCC plant based on the KRW

gasification technology. (Additional information on the Waltz Mill development unit has been added to section 2.1.2 of the Final EIS.)

As part of its Electric Resource Plan (Supply Side Plan) submitted to the PSCN, SPPCo. identified the technical risks associated with the proposed Piñon Pine Power Project. Much of the plant would be conventional, and would have negligible to very low technical risk. Apart from the gasification system, the plant would be a conventional, fully functional, combined-cycle power plant capable of operation on either natural gas or propane. For these areas of the plant, full-scale plant data are available, the operational aspects are well defined, and no significant design assumptions are required.

The major portions of the plant that fit this low risk category are:

- Coal Receipt and Preparation
  - Coal receiving
  - Coal handling and transport
  - Coal drying
- Gas/Oil Fired Conventional Combined Cycle
  - Gas/Oil storage and delivery systems
  - Gas turbogenerator set
  - Plant controls
  - Heat recovery steam generator
  - Steam turbogenerator set
  - Condenser, pumps, piping, etc.
- Heat rejection system
  - Electrical interconnection
  - Plant auxiliary systems (water treatment, shops, etc.)

The "demonstration" portions of the plant are more developmental in nature and would involve scaleup from pilot plant quality data, or design assumptions based on limited data, or significantly different uses. However, as previously stated, experience with the technology dates back to 1972 when the government funded the design of the process development plant at the Waltz Mill facility.

The four areas of the gasification/hot gas cleanup systems having a moderate level of technical risk would be as follows:

Gasification with in-bed desulfurization

- Coal and limestone pressurization and conveying to the gasifier
- Agglomerated ash conveying and removal
- Gas Conditioning and Desulfurization
  - Product and recycle gas coolers
  - Gas filter
  - Recycle gas compressor
  - Zinc-based desulfurization system
  - Exit gas cooler
- Low-Btu Gas Combustor Controls Sulfation
  - Fluidized bed combustor and sulfator
  - Solids cooler/conveyor

The gasification system would be an important component of the proposed project. A gasification island upset could be caused by abnormal operating conditions, interruption of feed (coal, steam, and air), loss of utilities, such as power or cooling water failure, and/or performance failure of the machinery and equipment. Plant components would be monitored on a continuous basis by the instrumentation provided and would alarm the operator should operating conditions deviate from desired values. Depending on the nature of the upset, corrective action would be taken to mitigate the problem, either by adjusting the operating conditions or by safe shutdown of the plant (if the problem persists). These corrective actions would be activated automatically by the plant's instrumentation and control system, but could also be controlled manually if it were necessary for the operator to intervene. During a gasifier island shutdown, equipment would be depressurized by venting the contained fuel gas to the flare. This would ensure that unburnt fuel would not escape into the atmosphere. The flare system is designed to accept the maximum coal gas output from the gasifier. Any trip of the gas turbine would lead to automatic shutdown of the gasifier island. (Information on gasifier island upsets has been added to section 2.1.2 of the Final EIS.) Although, at most, only 3 or 4 upsets per year would be expected, for the purpose of estimating potential air quality impacts, SPPCo. predicted maximum emissions from 8 upsets. In addition, operations during upset conditions are monitored under state regulation (NAC 445.667). All upset episodes must be reported and must include a description of the steps taken to limit the malfunction and measures taken to prevent a recurrence. In the event that the project was found to be unreliable, SPPCo. would switch to an alternative fuel source, and as explained in section 5.2 of the Draft and Final EIS, would terminate operation of the gasifier and stop using the cyclone unit and hot gas cleanup section.

4-b My second concern is that machines are not a hundred percent efficient. When you are talking about 800 tons of material, you are talking about -- I don't know, what is the efficiency of this?

MACHINE EFFICIENCY

RESPONSE: Section 2.1.3 of the Draft and Final EIS discussed the various control efficiencies associated with proposed project equipment. The combustion turbine would be equipped with a high temperature mechanical filtration system which would remove particulate from the gas stream prior to firing in the combustion turbine. This system would provide a control efficiency of 99 percent. The sulfation combustor would be equipped with a fabric filter for particulate removal with a control efficiency of approximately 99 percent. All coal handling and processing facilities including the railcar unloading facilities, material storage, and conveying systems would be enclosed with a fabric filtration systems providing approximately 99 percent control efficiency at exhaust points. The sulfur removal efficiency is expected to be approximately 95 percent with less than 20 ppmv of sulfur compounds remaining in the product gas.

4-c What is the efficiency of your particular [sic] emissions, your sulfur oxide?.... If you did a real quick math on that, that comes out to about a ton a day of particulates....At any rate, assuming 135 tons is not overly optimistic. That's all going into the air. And you are talking about day after day after day after day, year after year after year.... What does escape to the atmosphere?... Okay. I would accept that the loadings are less. But the whole point of the matter is you are still talking about tons of material. You are talking about tons of particulates. You are talking about tons of sulfur oxides. And you are talking about accumulation of these. I mean, the air blows it away, a lot of it settles down, settles into the river, settles other places.... Okay. All right. 135 tons per year. If you were to take and put a ton of dust into this room, what do you think it would be like?

CONTROL EFFICIENCIES
EMISSIONS
OXIDES OF SULFUR
PARTICULATES

**RESPONSE:** If SPPCo. were to burn at the maximum design capacity of 880 tons of coal per day, and given that the sulfur content of coal would be approximately 0.45 percent, then 3.96 tons of sulfur would be burned each day. If 112.5 tons of sulfur (225 tons of sulfur dioxide) would be emitted each year, this would translate to 0.308 tons/day of sulfur emissions, which represents 92 percent control of the sulfur input. Annual consumption of solids would be approximately 343,100 tons (321,200 tons of coal plus

21,900 tons of limestone). It is projected that 135 tons per year of particulates would be emitted, or 0.039 percent. Consequently 99.96 percent of the solids entering the combustion process would not be released.

4-d Of course, that is an assumption that was made. At any rate, going on, we're concerned about your modeling that it's not site specific and doesn't take into account some Northern Nevada and some topography features. I didn't see anything that did. For instance, we have lots of inversions, 150, 200 of them a year. inversions can sometimes be very shallow, 600 feet. So instead of the particulates going up, mixing all over, spreading out and distributing, they don't. They go up, they hit, and looks like a mushroom cloud. I know, I watch one from Nevada Cement do that all the time. So we're concerned about that. We're concerned about stagnant air masses. Northern Nevada has the second all time world for stagnant air mass. I didn't see that addressed... I'm questioning what you put into the model.... There is hills on both sides, in addition.... Those are the things basically I am looking at. So what we see is that there is a lot of meteorology factors, and there is the funneling factor, you might say, with the mountains and things. And we want to make sure those things are considered because they can have an impact far far away. I mean, you can magnify the effect. If you look at the map, it looks like the plant is a long way away from Wadsworth and Fernley, but in reality, if you have all these other things and if you have a mountain range trapping it in the sides, you are not talking about that much air to serve as your dispersant. furthermore, this is a cumulative thing year after year after year after year after year. Basically the areas of Wadsworth and Fernley are already highly impacted by a coal burning facility, Nevada Cement. They really can't afford another big volume impact.... I doubt that the data would be available very readily.... The state in my opinion makes a conscious effort not to monitor out there. And I said that is my opinion.

CUMULATIVE IMPACTS
EMISSIONS
INVERSIONS
NEVADA CEMENT
SITE-SPECIFIC MODELING

**RESPONSE:** The air quality analysis presented in section 4.1.2.1 of the Draft EIS was based on site-specific information. However, additional information has been provided in the Final EIS (section

4.1.2.1) for clarification. The Complex Terrain Dispersion Model Plus Algorithms for Unstable Situations (CTDMPLUS) is a refined air quality model that is preferred for use in all stability conditions for complex terrain applications. It is particularly applicable to the Tracy site because data collected during field experiments at the site in 1983 and 1984 were used in developing the model. In addition, the modeling analysis for the proposed project incorporated two years of meteorological data collected at the Tracy monitoring site, which were collected throughout the calendar year and included hours representative of wintertime inversions and stagnant air masses, so that the predicted impacts from the project include impacts resulting from these types of meteorological episodes. The effects of local topography were incorporated through the use of input data files, containing digitized representatives of surrounding terrain so that the aerodynamic effects of hills, ridges, etc., were also incorporated in predicted project impacts.

In addition, in response to concerns expressed during the comment period for the Draft EIS, additional air quality analyses for the Nixon and Wadsworth areas have been performed and the results incorporated into the Final EIS (see section 4.1.2.1). The data indicate that the maximum predicted impacts at Wadsworth would be less than 10 percent of EPA's significant impact levels and less than 0.30 percent of the ambient air quality standard. The maximum predicted impacts at Nixon (the more distant location) would be even smaller, in most cases. At these low concentrations, the ambient air quality monitors at either location would not detect any impact from the proposed Piñon Pine Power Project (i.e., the predicted impacts would be less than the detection limits of the monitors).

Additional information on cumulative impacts and background levels is provided in a subsequent comment. Please see Response to Comment 19-e.

4-e At any rate, there is a concern. I think there is quite a few people who have respiratory distress already, and a coal burning facility, from what I saw, burning coal, even a clean one, there's no such thing as clean coal. There's clean air but no such thing as clean coal. Coal contains trace amounts of heavy metals, zinc, mercury, antimony, chromium, beryllium, lead. In theory those things get disbursed. In reality we're talking about a basin. You can look over there on the map and you can see, there's almost no way that much of that stuff isn't going to end up in Pyramid Lake one way or another. Either the air is going to put it there or it's going to settle down, and you are going to have the particulates

EMISSIONS HEAVY METALS and things washed into the river. I haven't seen that covered either.

**RESPONSE:** The Draft EIS was revised (see section 4.1.2.1 of the Final EIS) to include Table 4.1.2-8b, which lists hazardous air contaminants and associated emissions from the proposed project. At the lower combustion temperatures of the proposed project, most hazardous air pollutants would not volatilize and if emitted into the air, they would be emitted as particulate matter. The fabric filters and ceramic filters incorporated into the project design would capture most of the particulate matter, thereby reducing the amount of hazardous air pollutant emissions. The EPA has published emission standards for 189 hazardous air pollutants (HAPs). A major source for HAPs is defined as a stationary source or group of stationary sources located within a contiguous area and under common ownership and control that emits, or has the potential to emit, at least 10 tons per year of a listed HAP or at least 25 tons per year of a combination of listed HAPs. EPA has currently excluded electric generating units, such as the proposed project, as major sources. A human health study by EPA of the 189 HAPs has been mandated by Congress prior to ascertaining whether or not regulation of electric generating units is necessary. After this human health report is presented to Congress in November, 1995, EPA may develop control strategies for HAPs emissions from electric generating units that warrant regulation. In addition, EPA is required to study mercury emissions from sources including electric generating units, and to report the results by November 1994. However, the report on mercury is not directly linked to any subsequent legislation.

As discussed in section 4.1.2.1 of the Draft and Final EIS, all HAPs emissions for any one pollutant from the proposed project would be well below 10 tons/year and presumably would be below levels for which regulatory agencies have established an immediate concern for adverse human health effects.

In addition, NAC 445.1339 sets toxic water quality standards for the Truckee River and other designated waters in Nevada. These standards are established to protect the aquatic life of the river. The Division of Environmental Protection conducts surveys annually to ascertain compliance with the standard. At the low emission rates of the proposed project, adverse impacts to the Truckee River from deposition of hazardous air pollutants generated by the proposed project are not expected.

A discussion of the air quality analysis performed for Wadsworth and Nixon was provided in the previous Response to Comment 4-d.

4-f How about the threshold levels as things go up? For instance, mercury concentrates by a factor of about 10.

BIOACCUMULATION MERCURY

RESPONSE: DOE realizes that EPA is investigating the Carson River mercury problem that resulted from the historic Comstock Lode mills, which used mercury to separate silver and gold from the ore. However, Carson River waters do not flow into the Truckee River; analytical results of samples taken from the Truckee River show no detectable amounts of mercury in the river at the Tracy Station site, indicating that no mercury problem exists. Nevada state regulations, NAC 445.1339, establishes toxic water quality standards for the Truckee River and other designated waters of the state. These standards are set to protect the aquatic life of the river and generally are designed to incorporate the impacts from bioaccumulation (in addition to chronic and acute toxicology). The half-life (i.e., the amount of time it takes for the concentration of a substance to drop by half) of mercury is reported to be 2-3 years in fish. However, because such low levels of mercury would enter the affected waters, no adverse impact to aquatic organisms is expected. It should also be noted that tissue samples of fish from Tracy Station's Unit #1 and #2 cooling pond have shown only small amounts of mercury. Modeling results (added to the Final EIS in section 4.1.2.1) indicate that the maximum 8-hour concentration of mercury from the HRSG combustion turbine would be 0.00004  $\mu g/m^3$ . The concentration from the sulfation combustor would be 0.00001  $\mu g/m^3$  and the mercury concentration from the flare would be 0.000004  $\mu g/m^3$ . Because of these low emission levels, no adverse impacts would be expected from the proposed Piñon Pine Power Plant.

4-g And it's the multi year thing. I mean, one year, two years, three years. I mean, you are talking about a big expensive plant that is going to be there 30, 40. You are not talking about something that's going to be gone tomorrow if we find out there is a problem.

CUMULATIVE IMPACTS
RELIABILITY

**RESPONSE:** A response to comments on technical uncertainties and risks, including what would happen if the technology proved unreliable was provided previously. Please see Response to Comment 4-a. In addition, the Draft and Final EIS addressed the issue of cumulative impacts in Chapter 6.

4-h I was wondering also if you have really looked at the temperature. I studied your EIS some. And as far as I can see, there wasn't a specific study per se made to determine if you were going to raise the temperature of the Truckee.... There is no such thing as a zero

WATER TEMPERATURE

discharge, with all due respect.... Okay. You look and there are ponds all over the place around there.... There is one that is double lined. Are they both double lined?

RESPONSE: Section 2.1.3 of the Draft and the Final EIS describe the cooling pond. The 271,999-cubic meter (355,749 yd³) cooling pond for the proposed project is a closed loop system used exclusively for Tracy Station's Units #1 and #2 circulating water system; water is pumped from the pond and returned to the pond. (The pond is not double-lined.) The cooling pond would not be used for heat rejection for the proposed project. The only discharge from the proposed plant would be from floor drains connected to the existing drainage system, which would not change the water temperature of the cooling pond. Water from the cooling pond would be used as a source of cooling water make-up when other sources (well water) are not available. The only other use of the existing cooling pond would be to supply water for the fire protection system. Consequently, there would be no change to temperature in the Truckee River. Because the water taken from the Truckee River for the proposed project would not be returned but would be either recycled within a closed loop or sent to a new double-lined evaporation pond, a temperature study was not performed. Monitoring wells would be placed around the evaporation pond to detect any leakage before any contamination reaches the Truckee River.

4-i .... The next thing I think has to do with the fact that Pyramid Lake is, if you look at area wise, there's not too far a distance, and the lake depends upon recreation and sports livelihood, it depends upon having clear skies and nice beaches and things like that. And I don't know. I mean, how many of these tons of particulates that are going to be released are going to be floating that way?... Basically I guess we could say that the tribe doesn't want a black haze and particulates over the lake.

EMISSIONS
PARTICULATES
PYRAMID LAKE
VISIBILITY

**RESPONSE:** The proposed Piñon Pine Power Project would emit approximately 123 tons of particulate matter each year or 674 pounds per day, which is equivalent to a 3 x 3 x 2 foot box completely filled with fine dust. Visible emissions from the proposed Piñon Pine Power Project, like all existing SPPCo. sources, would be limited by state regulation to opacity less than 20 percent at the point of emission. A visibility impact analysis, using the EPA model VISCREEN, determined that the proposed Piñon Pine plume (consisting mostly of particulate matter) would not be detectable to the human eye at distances greater than 5 km (3 miles) under the most adverse weather conditions (stable air mass). At the closest

point, Pyramid Lake is approximately 30 km (19 miles) from the project site. Therefore, the plume from the proposed Piñon Pine stack should not be visible to tourists at any point around Pyramid Lake. Air quality analyses, specific to the Pyramid Lake area, have been conducted and are incorporated into sections 4.1.2.1 through 4.1.2.3 of the Final EIS (see also Response to Comment 4-d).

4-j I guess the other thing I wanted to say is as I studied the Environmental Impact Statement, it basically said there are better places to put it, if you are looking at the environment and things like that. If you are not using economics as your sole consideration, there are better places to put the project than where it is.... You have 135 million-- ... --dollars on where it goes, and the North Valmy was environmentally a much better and is a much more isolated area, with much less chance of having any environmental particulate.... The other was basically a better considered site, though, wasn't it?... It is just mentioned in the EIS.... I read those others, and it seemed to me the basic one seemed to be the fact they didn't want to increase the staff by 50 percent there, and they didn't want to put in propane as an alternate.... And they didn't want to build another control tower.

ALTERNATIVE SITES VALMY

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a.

4-k The final thing I guess I can say is that the tribe are semi-dependent [sic] nations, and they have a right to set air quality standards, which would apply on the reservation. Indirectly they would apply elsewhere. And if they get pushed to the wall, get surrounded by a bunch of coal burning facilities, I imagine they will have to do something about that. And other places would have to consider that with the permitting and things like that. I mean, I know the tribe cannot directly regulate this. But air and water and things like this flow, and so I think the government should try to consider that and not push people into having to regulate the standards, particularly in view of the fact the State of Nevada is undergoing a real problem of one of the laws that was put through in the last legislature forbid the State of Nevada from setting any standard more strict pollutionwise than

AIR QUALITY STANDARDS

federal minimum. In spite of the fact that there are big differences, and that is not the intent of the federal law. Fortuately [sic], the Governor vetoed it.

RESPONSE: DOE recognizes that the Clean Air Act provides for Indian Tribes to promulgate and enforce their own air quality standards. Since the proposed Piñon Pine Power Project would be in compliance with all applicable Federal and state air quality standards, it would be expected that compliance would continue if new standards were implemented. However, DOE and SPPCo. appreciate the concerns expressed and consequently performed additional air quality analyses for the Nixon area (see section 4.1.2.1 of the Final EIS). Although not required by regulation, this analysis provides further information that supports the conclusion that the proposed project would not have an adverse impact to the air quality at the reservation.

# 5: Mervin Wright, Jr., Water Resources Director, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

5-a My name is Mervin Wright. I am the water resources director for the tribe. My main concern at least with the Department is we deal with the water rights for the tribe and for the region. And I have also written, I have a written statement also that I handed to you, and I do have some additional questions as I sat here and listened to the presentation. But I wanted to know, what is the present discharge at the Tracy Clark Station?... There is an amount that recharges into the river.... But you are also going to have nonpoint source; right, as a recharge?

DISCHARGES

RESPONSE: As explained in section 3.4.2 of the Draft and Final EIS, existing Tracy Station facilities do not discharge into the Truckee River. Water resources associated with the proposed project are discussed in section 4.1.4 of the Draft and Final EIS. Discharges from the proposed project would be directed to the new, double-lined evaporation pond, with monitoring wells placed around the pond to detect any leakage before contamination could reach the Truckee River. Stormwater would be routed to the cooling pond. The cooling pond can accommodate approximately 43 acre-feet of runoff without overflowing. Groundwater recharge by cooling pond seepage is approximately 0.8 cfs (571 acre-feet/year), with approximately one-third of the seepage potentially moving toward the river and two-thirds heading away from the river toward the southeast. There are no projected changes in the use

of the cooling pond as a result of the proposed project. Consequently, no impact to water quality in the Truckee River is expected from the proposed project.

5-b I don't know if any of the Sierra Pacific Power people are here tonight, but did they have an alternative site and why was the Tracy Clark Station chosen as the first choice?... But you didn't? You said you tried to define it?... So it is pretty much driven on economics then.

ALTERNATIVE SITES

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a.

Yeah. I only looked at the water resources parts of the 5-c EIS. As far as the water rights are concerned, I guess this Piñon Pine Power Plant will be exercising the 1961 and 1974 water rights of the power plant, the present Tracy Clark Station? That's a very junior right compared to other water right holders in this river basin. So what's going to happen? As we all know, this is probably going to be a repeat of 1992 when there's only maybe 30 second feet in the river. What's going to happen if we are going to experience this in the future if this plant goes through? I mean, I just throw the question out because it is a concern that we have. When it comes to Sierra Pacific's water rights, they have the first right to divert the 40 second feet at Verdi, and there have been times in 1992 when there's no water in the river in Reno, stretches of the river. We're subject to those return flows. So I'm asking, are we going to be subject to the points of diversion at Tracy Clark Station after, as this pilot project is in place?

WATER RIGHTS

RESPONSE: All of the consumptive Truckee River surface water rights for the proposed Piñon Pine Power Project were adjudicated in the Final Decree entered September 8, 1944 in the United States of America v. Orr Ditch Water Company et al. (The Orr Ditch Decree). These existing SPPCo. water rights, which are junior to those of the Pyramid Lake Paiute Indian Tribe, would be used for the proposed project at Tracy Station. A list of Tracy Station surface water rights has been added to section 3.4.1 of the Final EIS. Under normal flow conditions (approximately 400-500 cfs), all water rights on the river would be met and no impacts to any water rights holders would occur. The mean Truckee River flow data from USGS Gauge LO350400 (Table 4.1.4-2 of the Draft and Final EIS), located below

Tracy, NV showed that for the period from October 1980 until September 1993, the river flow was below 400 cfs 42 percent of the time (71 months); between 400 and 500 cfs 18 percent of the time (30 months); and above 500 cfs 40 percent of the time (67 months). For the analysis of potential impacts during low flow conditions, the lowest flow conditions during this period were used (50.5 cfs during October 1992). As shown in Table 4.1.4-1 of the Final EIS, under these conditions, the anticipated additional withdrawal of 1.4 cfs from the proposed plant would be equal to approximately 3 percent. In general, downstream water users (e.g., the Newlands Project) would have the potential to lose access to less than 0.5 percent of the Truckee River's flow and typically would lose between 0.1 and 0.2 percent. As mentioned in Section 4.1.4 of the Draft EIS and clarified in the Final EIS, additional unappropriated river flow would reach Pyramid Lake if the Truckee Canal was diverted to capacity or if all regulated water withdrawals had been made. It should be noted that SPPCo.'s senior right to 40 cfs (second only to the Pyramid Lake Paiute Indian Tribe) is used to supply drinking water to the Reno area. This right would not be used for the proposed project.

5-d Follow up to that, what is the out-take? What type of out-take do you have in the river? It is a pipe, is it a ditch, is it a flume? What is it that you have at Tracy Clark that takes the water from the river?... Is that a ditch or a pipe?

WATER DIVERSION

**RESPONSE:** Water from the Truckee River is supplied to the Tracy Station through a pump station at the river. Under normal conditions, water flows naturally into this pump station, which consists of a concrete intake structure, a trash rack, two removable screens (in series), and two vertical pumps. The trash rack prevents debris from entering the intake structure; the screens prevent smaller debris and fish from entering the pump area. The pumps have capacities of approximately 2,000 and 4,000 gpm, and supply water to the cooling pond and the Unit #3 cooling tower basin. Pump selection and operation is based on plant cooling water needs.

Previously, a one way flap gate was used to supply water to Units #1 and #2. This gate has been permanently closed and water for these units is supplied by the river makeup station to the cooling pond. An underground line connects the cooling pond to the circulating water system for these units.

5-e .... Monte talked quite a bit about the emissions from the stacks, and as we now understand it, it is going to be tons that is going to be released from the stack, not small amounts. You are talking about 800 tons a day.

EMISSIONS STORMWATER RUNOFF So one percent of that is eight tons. If we are talking a small percentage, as an example, one percent, it could even be less than that, but we're talking about tons. Now wind generally blows east through that corridor. And during times at least in this region, we experience more of cloud bursts, downpours instead of a steady rain. So in those times when we have those downpours and those cloud bursts, you are going to get a lot of runoff into the river. So it's our concern here that I don't think it was addressed in the EIS about the possibility of those things happening. And even though it can get — it's going to have to be addressed and it probably will be. It is kind of a relation to what the environmental director had addressed. So I just wanted to bring that point up.

**RESPONSE:** The Tracy Station area averages only 19.05 cm (7.5 inches) of rainfall annually; runoff usually is nonexistent, although a stormwater management plan has been developed (see section 4.1.4.2 of the Draft and Final EIS). All stormwater, if any, draining from the property discharges to the cooling The dominant local drainage direction is northward toward the Truckee River; however, stormwater is controlled on site to prevent any discharge to the river. Drainage from the hill slopes, south of the power plant, is intercepted by the railroad track grade and diverted to culverts beyond the plant site. Drainage on the developed portion of the property (approximately 80 acres) is principally in the form of sheet flow caused by both the high percentage of impervious surface (i.e., asphalt parking and roadway areas) and compacted soil in the developed areas and the lack of manmade or natural channels on site. The drainage pattern on the property is controlled by graded slopes, which split surface runoff northwesterly and northeasterly of the generating units. Surface runoff flowing northwesterly splits into two flow paths, an unlined swale and a well-developed gully that convey runoff to the cooling pond. Surface runoff flowing around the east side of the generating units drains into a storm sewer system through drop inlet catch basins and is routed through an oil/water separator before discharging to the cooling pond. Section 4.1.4.2 of the Final EIS explains that according to NOAA Atlas 2, Volume VII (Miller, 1973), the rain index of the 100-year, 24-hour precipitation event is 2.8 inches. Inflow to the cooling pond, therefore, would equal 2.8 inches x 1 foot x 80 acres or 18.67 acre-feet. Since the cooling pond can accommodate approximately 43 acre-feet of run-off without overflowing, the freeboard capacity of the pond exceeds the 100-year precipitation event by a factor of 2.3.

Additional information on the impacts from acid rain during cloud bursts is provided in a subsequent comment. Please see Response to Comment 18-f.

Also kind of as a follow-up to some of the concerns that 5-f the environmental director presented was the mercury, and we know that what it does to aquatic life, it does to the environment, is not good. The Carson River is experiencing a serious problem with mercury. Look what it's done to Lahanton Reservoir. So we're even experiencing these little clams that are only present in polluted waters. They are all up and down this whole river. Wherever you go you find them. So whatever is being put into the water affects us here. So anything that is in the water is going to be in Pyramid Lake. And we do not want to see the big industries coming in and destroying a very valuable resource such as Pyramid Lake and a very valuable fishery. And for the people who consume the fish, not only tribal members but those sport fishermen and visitors that come in, they are going to have to deal with it also. That's why it is real important that we don't have a big industry come in and just destroy this whole valley as we see the cement plant down there. It gets up this way. This whole valley, you can't even see past here. So that is pretty much all I wanted to present tonight, and I probably will add some comments by the deadline. I'm sure that Monte and I, and probably the chairman, maybe some of the council people, will get together and discuss this EIS at a little bit more length so that we can probably come to more conclusion on what our concerns are.

MERCURY PYRAMID LAKE WATER POLLUTION

**RESPONSE:** Responses to comments on mercury were provided previously. Please see Responses to Comments 4-e and 4-f.

The proposed Piñon Pine Power Project would operate as a "zero discharge" facility, ensuring that no discharges from the proposed project would enter the Truckee River. In addition, several specific efforts have been proposed to reduce or eliminate pollution concerns (see section 4.1.12 of the Draft and the Final EIS). Waste would be reused, recycled, or disposed of in accordance with state, local, and Federal requirements. Boiler blowdown and demineralizer wastewaters, which are not hazardous, would be discharged to a double-lined evaporation pond. Appropriate containment structures, such as secondary containment, containment piping, leak detection, and other techniques, would be constructed around

chemical or petrochemical storage tanks to avoid the mixing or spillage of those compounds in surface runoff. All concrete would be treated so that it would be impervious and chemical resistant. Fugitive emissions from coal delivery would be minimized with the application of a dust suppressant. Storage facilities would be installed to house coal. Compliance with Federal, state, and local regulations, implementation of health and safety procedures, and adequate maintenance would result in minimal impacts from wastes generated during operations.

## 6: Melissa Smith, Public Hearing-Nixon, 6/21/94

I didn't get a chance to read the EIS. For some reason I wasn't on the mailing list. But I do have some questions. Monte, what you just said about the air quality and the wind going east for the most part, well, that's where I live. I live by the Lahontan Dam area. That is my concern is the air quality, what is it going to do to that recreation area. I don't know if it is addressed in here or not. I have only had a brief time to look at the book.... What mile radius was addressed?...

AIR QUALITY LAHONTAN DAM RECREATION AREAS

**RESPONSE:** As stated in the introduction to Chapter 3 of the Draft and Final EIS, analysis of areas that would be affected by the proposed Piñon Pine Power Project varied, depending on the resource being discussed. For air (section 4.1.2 of the Draft and Final EIS), the affected area was determined using EPA protocols and regulatory requirements. Modeling analyses identified significant impact areas of 4.6 km (2.86 miles) for the 24-hour averaging period and 3.0 km (1.8 miles) for the annual averaging period for particulate matter (PM<sub>10</sub>) and 5.9 km (3.57 miles) for the 3-hour and 24-hour averaging periods and 5.0 km (3.12 miles) for the annual averaging period for sulfur dioxide (SO<sub>2</sub>). Lahontan Dam is approximately 48.27 km (30 miles) east of the proposed Tracy site, which exceeds all significant impact areas by more than 40 km (25 miles). In response to expressed concerns, additional air quality modeling was performed for the areas of Nixon and Wadsworth (see section 4.1.2.1 of the Final EIS) and indicated that no impact would result from the proposed project. Since Lahontan Dam is even further away, no impact to air quality as a result of the proposed project is expected in this area.

A visibility impact analysis also was performed (see section 4.1.2.2 of the Draft and Final EIS). The results of the VISCREEN analysis indicated that the proposed project would not result in a plume detectable against the background sky beyond 5 km (3.1 miles), downwind. No impacts to visibility in the Lahontan Dam area are anticipated.

6-b ....My other question was: Does anybody have an address for the place in Louisiana?... Is there any way that we can get comments? That plant is up and running now?... Is there any way that we can get an address to ask how they are doing?

IGCC OPERATIONS LOUISIANA PLANT

**RESPONSE:** The referenced Louisiana plant, although not an Integrated Gasification Combined-Cycle (IGCC) system, utilizes the proposed gasification process. The address is:

Louisiana Gasification Technology, Inc. P.O. Box 150 5701 Building Plaquemine, LA 70765-0150

6-c The councilman, he raised some what if questions, and I'd also like to put that out, too. What if questions can involve what if an earthquake hits. Some people say there is going to be a big one, it's going to hit the Reno-Sparks area. I did notice there is a small section in here for earthquakes. What if questions are important because we do need to be prepared.... Suellen, what would be the maximum?

**EARTHQUAKES** 

RESPONSE: Sections 3.3.1 and 4.1.3.1 of the Draft and Final EIS explain the probability of an earthquake occurring, describe the impacts from an earthquake, and identify the mitigation measure that has been incorporated into the proposed plant's design. Although it is unlikely that the site would experience a Maximum Credible Earthquake of 7.0 (on the Richter Scale) during its 35-year design life, the high historic seismicity suggests that the site would experience strong ground motion. Some estimates predict an earthquake of 7.0 or greater magnitude could occur in west-central Nevada as frequently as every 45 to 75 years. Accordingly, the facility would be designed and constructed following the most stringent, Seismic Zone 4, Uniform Building Code (UBC) guidelines. The intent of UBC specifications is to ensure that structures are designed and constructed to resist the effects of potential seismic ground motion. The specifications are based on the structure's location (seismic zone, soil characteristics, and wind speeds), purpose, size, and the construction materials used. In addition to building specifications, specific requirements are provided for stacks, silos, cooling towers, bins and hoppers, and other non-building structures. UBC specifications include values for minimum vertical and lateral (horizontal) loads. Specific requirements also are provided for roofs; walls; storage racks; tanks and vessels;

electrical, mechanical, and plumbing equipment; fire sprinkler supports; and elevators. Because of these design features, it is expected that the external structures and internal features of the proposed project would withstand the potential force. However, if a breach of containment were to occur, the procedures delineated in SPPCo.'s Chemical Emergency Response Plan and Spill Prevention Control and Countermeasures Plan would be followed to reduce or eliminate the extent of the impact. More information on seismic risk is provided in the Geology, Soil, and Seismicity Technical Report, which is available in the reading rooms.

6-d ....But another what if question is again the coal spills.

Nobody expected that train to derail and to dump all those fertilizers and stuff into the California river.

Another what if. What if something happens to the railroad and the coal does dump into the river? It goes right along the river for many many miles, and it could be not only a load of coal to go to Tracy Clark, it could be a load of coal going to California. They frequently pass by there. What if, is there going to be a special hazardous waste team?

COAL SPILLS

**RESPONSE:** A response to comments on potential coal spills during rail transport was provided previously. Please see Response to Comment 1-b.

6-e Now you are going to be bringing sulfur in by train, too, or is that going to be by truck?... Or lime.... That will be by truck?....

LIMESTONE TRANSPORTATION SULFUR TRANSPORTATION

RESPONSE: The sulfur discussed in the Draft and Final EIS pertains to the sulfur content in the coal. As described in section 2.1.3, the proposed coal for use in the proposed plant is low-sulfur western sub-bituminous/bituminous coals (except for a short-term test with eastern coals, which would take place during the demonstration period, pending PSCN approval). The expected range of sulfur content is 0.35-0.55 percent. Coal would be transported (weekly) by rail. Approximately 84 railcars, each with a capacity of between 100 and 110 tons, would deliver coal to the site. Sized limestone would be received on a daily basis via covered or enclosed trucks; a maximum of 4 truck deliveries would be made each day.

#### 7: Maurice Eben, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

....I am a tribal member, and I'm currently working with 7-a the Numaga Senior Citizen Program. We have been involved with the ethnic history and archaeological studies on the Tuscarora Pipeline, and just recently the Tribal Council appointed the Numaga Senior Citizen Program to deal with the cultural preservation, repatriation and so on. We have four concerns. They don't need to be answered because I don't think it will be answered in a forum like this. I don't think this is the appropriate place. What environmental hazards does such plant pose for tribal communities? In listening to everybody talk, there isn't an answer. No matter how much clean air we want, and no matter how many reports and statistics you guys want to expound on, we're not getting the answer. There is going to be a definite reaction to building that plant. And we'd like to know just what hazards. Not what you are trying to prevent but what kind of hazards can actually happen from what's going to be put out.

AIR QUALITY HAZARDS

**RESPONSE:** A response to comments on potential hazards was provided previously. Please see Response to Comment 2-c.

The purpose of the Environmental Impact Statement is to identify and analyze all the potential impacts (to the environment, to worker health and safety, and to the surrounding community) in terms of environmental, health and safety, and socioeconomic impacts associated with the proposed action and the reasonable alternatives. Section 1.4 of the Draft and Final EIS explains the NEPA strategy that has been followed, including how the information obtained during the scoping process was used. As a result of the comments received on the Draft EIS, the document has been modified. One revision is the inclusion of site-specific air quality analysis for tribal areas, including Nixon and Wadsworth (see section 4.1.2.1 of the Final EIS and Response to Comment 4-d).

7-b ....Will the Environmental Impact Statement include a study of the downwind particulates and their effects on the air quality of the communities of Wadsworth, Nixon and Suttcliff?

DOWNWIND EFFECTS
PARTICULATES

**RESPONSE:** A response to comments on local air quality was provided previously. Please see Response to Comment 4-d.

The Draft EIS did not include a study of air quality outside of significant impact areas. The extent of the significant impact area for particulates is 4.6 km (2.8 miles) for the 24-hour averaging period and 3.0 km (1.8 miles) for the annual averaging period. Wadsworth is approximately 16.8 km (10.5 miles) to the east-northeast; Nixon is approximately 30 km (19 miles) to the northeast, and Sutcliff is approximately 42 km (26 miles) to the north of the proposed plant. All of these areas exceed the significant impact area by more than 10 km (6 miles). However, in response to concerns expressed during the comment period for the Draft EIS, additional air quality analyses for the Nixon and Wadsworth areas have been performed and the results incorporated into the Final EIS (see section 4.1.2.1).

7-c .... What effects will the downward [sic] particulates have on our agricultural land and the water quality downstream from a coal-fired plant?

AGRICULTURAL LAND DOWNWIND EFFECTS PARTICULATES WATER QUALITY

**RESPONSE:** Impacts of particulate and other emissions to agricultural land and water quality downstream of the proposed Piñon Pine Power Project are described in sections 4.1.2.1 through 4.1.2.3 of the Draft and Final EIS. No impact to human health is anticipated as a result of particulate emissions from the proposed Piñon Pine Power Project; similarly, no impact to agricultural land or water quality is expected.

7-d ....Will the tribe have an active role in participating with the EIS archaeological and history reports. The last one is probably more of what the elder program does since they have participated with the Tuscarora Cultural Research Group. We have taken field trips and we have been able to develop a pretty comprehensive concern on that. Also the elder program, the people enjoyed the respect that was given to them by asking what their concern was and allowing them to go out on to the route and actually take a physical look. I haven't gotten a chance to look at the portion of the EIS yet, but you know, there is a variety of groups on the reservation, not just the tribal government, that would need to get these reports in order to have a concern.... You know, before

CULTURAL RESOURCES

it's all done, I realize it is a draft, but whoever your archeologist was should give us a call.... Because we know those areas from just eyeballing the map that you put up on the screen, there is habitation sites on that side of the river and then on the other side of the river also.... Isn't that supposed to be part of the EIS now?... Well, I think that would determine on what the tribal people have to say, not what the archaeologists have to say, considering the archeologist isn't a member, and we have people alive right now that know those sites.

**RESPONSE:** The Historic Properties Inventory and Archaeological Site Evaluation was prepared by a consulting firm for SPPCo. (see section 4.1.7 of the Draft and Final EIS) and reviewed by the State Historic Preservation Officer (SHPO). SPPCo. would, with SHPO approval, allow access to the sites on SPPCo. property for Tribal Elders Program investigators. A copy of this report was sent to the commenter.

#### 8: Robert Martinez, Public Hearing-Nixon, 6/21/94

8-a ....I'm just a concerned citizen. I have some questions on the air quality monitors. You stated that you start monitoring in '93, and the location of the monitor is east of the Tracy Power Plant. Is that going to be the only monitor for the whole project?... Just one, because that is all that exists out at Valmy is one for the whole area. The topography is Valmy is quite different versus the river area and versus the Virginia range where the Tracy Power Plant is.... Because the monitor, you talked about the stacks themselves.... That's fine. But what about out in the air, and also I see you are monitoring, you are getting the existing effects, and then in the Draft EIS, they address the cumulative effects of the proposed project in addition to what exists?

AIR QUALITY MONITORS
CUMULATIVE IMPACTS

**RESPONSE:** At the present time, there is one monitoring site located at the Tracy facility to collect the air quality and meteorological data used in the modeling analyses for the proposed project. The number and location of air quality monitoring sites required after operation of the proposed Piñon Pine Power project begins would be specified by NDEP as a condition of the Permit to Construct.

The values presented in section 4.1.2 of the Draft and Final EIS are projected emissions that would result from the operation of the proposed project. It is possible that an individual impact would appear minor, but when combined with other impacts, collectively, the impact could become serious. Consequently, an analysis of cumulative impacts was performed to ensure that the proposed project would not contribute to an adverse impact (see Chapter 6 of the Draft and Final EIS).

8-b ....And then on your emissions, the sulfur and stuff, it is going to be like 200 pounds a day is what is going to be the exhaust from the stacks. Is that what is going to go into the air, based on micrograms?

EMISSIONS SULFUR

**RESPONSE:** These two measurements (pounds per day and micrograms) are not equivalent. Concentration values are presented as parts per volume of air  $(\mu g/m^3)$  while total emissions are presented as amounts per unit of time (tons/year). Sulfur dioxide emissions are estimated to be 225 tons per year with maximum concentrations of 65.8  $\mu g/m^3$  (using a 3-hour averaging period); 12.9  $\mu g/m^3$  (using a 24-hour averaging period); and 2.0  $\mu g/m^3$  (using an annual averaging period). To determine the amount of sulfur dioxide emitted on a daily basis, 225 tons per year would be divided by 365 days; this would equate to 0.61 tons per day or 1,232 pounds/day.

8-c ....Sometimes the way Reno is and in proximity to the reservation here, a lot of times in the winters you will get the winds and it will blow from the inversion layers, all the pollution will sit and hover over the lake. I know that from going out there with the sports fisherman. Is this going to occur from possible inversion out there by the Tracy Power Plant and get a big gust of wind and blow that this way? I know that possibility exists. You are out there all the time. You can see it. All the pollution comes this way.

EMISSIONS INVERSIONS

**RESPONSE:** A response to comments on local air quality was provided previously. Please see Response to Comment 4-d.

8-d ....An then, in addition, any time you burn fuel, coal, you are going to have some sort of acid rain. That's been documented. Has that been addressed in the EIS at all?

ACID RAIN

**RESPONSE:** The Draft EIS provided a discussion of acid rain in section 4.1.2.3; the discussion has been expanded in the Final EIS.

"Acid rain" (acidic deposition) involves processes (such as in-cloud reactions of SO<sub>2</sub>, NO, NO<sub>2</sub>) that remove pollutants from the atmosphere that may be emitted from fossil fuel combustion sources and deposit them on the ground. This removal of pollutants is referred to as "precipitation scavenging."

The impact of acidic deposition is experienced nation-wide. In response to a congressional mandate, the National Acid Precipitation Assessment Program (NAPAP) was created by the Acid Precipitation Act of 1980 to perform a comprehensive 10-year study of the effects of acids and other pollutants emitted from fossil fuel combustion and other sources. The NAPAP study looked at the effects of acidic deposition on the environment, the economy, and human health from scientific, technological, and economic perspectives. The results indicated that acidic deposition effects are generally much less severe than many earlier assessments concluded. Virtually all damage linked to acidic deposition has occurred in the eastern United States, where lakes and forests appear to have a relatively low ability to absorb increases in acidity. In contrast, lakes (with low natural acidity—high pH) and forests in the West have not been threatened.

As a method or alternative to help avoid some of the impacts of acidic deposition, regulatory emission limits have been imposed. Increasingly more stringent limitations are being placed by EPA on the emissions of SO<sub>2</sub> from electric utilities, that will eventually ensure a 40 percent reduction of SO<sub>2</sub> (i.e., about 10 million tons of emissions) by around the year 2000.

Acid neutralizing capacity (ANC; i.e., the capability of a system to withstand changes in pH) is commonly used to describe episodic acidification. Such episodic acidification is conceptually possible from acidic deposition (particularly during thunderstorms). Acidic deposition is an important (yet highly uncertain) component of the acid-base budget of watersheds and low ANC lakes and steams. ANC with elevated aluminum concentrations and high acidity characterizes episodic steam acidification. The Truckee River, in the vicinity of the proposed site, in common with many of the watersheds in the western United States, has low acidity (with a pH of approximately 8.5). Because of this low acidity, in conjunction with rain being diluted by the river volume, any increased acidic deposition from the proposed project would not lead to discernable effects or damage to downstream users.

All units subject to acid rain regulations contained within the 1990 Clean Air Act are required to install continuous emission monitoring systems, called CEMS, to continuously monitor emissions of SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub>. In addition, the New Source Performance Standards contained in 40 CFR Part 60 also require continuous monitoring of specific pollutant emissions. The proposed Piñon Pine Power Project would be subject to both of these regulations. To comply with these emissions, emission points would be equipped with the applicable CEMs to collect data on pollutant emissions. As required in the regulations, this information would be submitted to both NDEP and EPA on a regular basis.

8-e ....this is a test project. So what's going to be the determining factor whether this passes or fails, this criteria that is evolving as you go?....Say the plant is built. This is our tax dollars.....What happens if the plant fails, so this 130 million dollars is toast?... Today there exists a basic criteria to determine pass or fail?... It is not going to be like another project that they are modeling.

SUCCESSFUL
DEMONSTRATION CRITERIA

**RESPONSE:** The basic criteria used to determine if a proposed project passes or fails are the answers to some basic questions:

- Will it run efficiently and reliably?
- Will it be economical?
- Will it meet all of its environmental requirements, especially all of its permit requirements?

If the proposed Piñon Pine Power Project does not meet these requirements, SPPCo. would operate the plant using natural gas as the primary fuel, and terminate usage of the coal-burning components of the plant (see section 5.2 of the Draft or the Final EIS).

The Clean Coal Technology (CCT) Program was created by Congress to open the door for a number of advanced, more efficient, reliable, and environmentally responsive coal utilization and environmental control technologies so they can become available to the U.S. energy marketplace. The technologies are intended to induce or eliminate many of the economic and environmental impediments that limit the full consideration of coal as a future energy resource in this Nation. The comprehensive evaluation

performed by DOE before selecting a project for demonstration included detailed analyses regarding the probability of success. Consequently, DOE believes the likelihood of success for each demonstration project, including the proposed Piñon Pine Power Project, is high.

#### 9: Frank Winnemucca, Tribal Rangers Volunteer, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

....I am a volunteer worker with Pyramid Lake Tribal 9-a Rangers. Now you people around here are experts on different things. But I don't think you can control nature. Neither of us. If you people can control nature, you are a better man than I am. Sure, this reservation is our livelihood. We were fenced in here by the federal government. And this Pyramid Lake is our livelihood. Our natural resource is Cui-ui's and Lahontan cutthroat. There are many people that comes here from different parts of the country that I have seen now since I have been a volunteer worker for this, I have met a lot of Canadians that comes here, people from California, people from New York, that comes here. They knew about this, they heard about it. They like its natural beauty here. But one thing, when they saw that black smoke coming from Northern California, wherever it comes from, that is part of the pollution coming in from California, from Oregon or wherever it may be. Now it's going to be the same way when the wind blows from the southwest here, and it is going to be coming up the canyon, and it's going to be blowing some of that black stuff coming up here, no matter how little it is, but it's going to be over here in due time, and it will be just nothing but black things.

EMISSIONS NATURAL RESOURCES VISIBILITY

**RESPONSE:** DOE appreciates your comment. In partial response, additional air quality analyses were conducted for the Nixon area and incorporated in the Final EIS, section 4.1.2.1. Please see Responses to Comments 4-d and 4-i for more information.

9-b Now we got a bird sanctuary here, which is Anaho Island. That's where the pelicans come every year and nest, and then they go back. Now how much water is going to be coming from those ponds, cooling ponds?... All right, if you are going to cut it off, cut if off over

ANAHO ISLAND NATURAL RESOURCES WATER QUALITY WATER SUPPLY there. I can see what is going to happen. That pyramid is just on the verge of sitting on dry ground as of now, and that is how I see it. Because I have been there practically every week. And that's how far down that water is. Now if you people can produce that much water, from our resources here, I think you are better experts than me and God, because for one thing, I just don't know why that white people always have to come and just spoil the natural resources that our creator gave us, divert it to somewhere else, and then send it to somewhere else, pollute it. Now look what the miners did to the Carson River. They haven't cleaned it up. And look what it's doing to Lahontan....

**RESPONSE:** The detailed analysis performed on water consumption by the proposed Piñon Pine Power Project (see section 4.1.4.1 of the Draft or Final EIS) does not indicate that Pyramid Lake water levels would be lowered as a result. Consequently, the proposed project would not adversely impact the bird sanctuary on Anaho Island. All water withdrawn for use by the proposed project would be consumed by the plant. No discharge back into the Truckee River would occur.

9-с I have learned long ago that we are sitting on a fault here too. And here during, I don't know when it was when we had this earthquake, when part of Fallon cracked and went down just about that much. And then that mountain dropped about a foot or so. Now this is on the verge of doing the same thing if we do have a quake here. And besides, too, that we're sitting on volcanic faults here. And I just don't know how far that goes. So I just don't know how you people get around and take the word of these geologists that comes around and taps here and taps there and says, well, this is good solid ground. I just never could understand that. And if you people are experts on that, and put something underneath this fault, maybe we don't have to worry about it, and maybe we don't have to worry about what happens if a good earthquake hits that. No matter how earthquake proof you make it, you just can't beat nature. So just think about that, ladies and gentlemen. How are you going to stop nature? And how are you going to stop this pollution, no matter how small you think it is? It really sounds good on paper. And it really sounds good when you say it. But how good is it going to be

**EARTHQUAKES** 

when it starts hitting the air? And we just don't know how much of it is going to come out, no matter what percentage that you figure it's going to be, because machines and stuff are unpredictable, just as well as anything else....

**RESPONSE:** A response to comments on the risk of and impacts from earthquakes was provided previously. Please see Response to Comment 6-c.

# 10: Carolyn Harry, Tribal Secretary, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

10-a I have one question. I guess it is for the Sierra Pacific Power Company representatives. What does Sierra Pacific hope to attain by participating in the pilot project? Is it to meet more consumer needs or the environmental concerns?

PURPOSE AND NEED

RESPONSE: As discussed in section 1.3.3 of the Draft and Final EIS, the primary reasons SPPCo. proposed the Piñon Pine Power Project are related to its need to provide power to its customers in a cost-effective manner. SPPCo. serves 250,905 electric customers in northern Nevada and northeastern California. Currently SPPCo. can generate approximately 833 MW of electricity and has contracts to purchase up to 417 MW as needed. The electricity needs of its customers have grown over the last decade, and growth is expected to continue to the year 2000 and beyond. Over the next 10 years, SPPCo. anticipates that an additional 450 MW will be required. The Piñon Pine Power Project was proposed to the Public Service Commission of Nevada (PSCN) as part of SPPCo.'s plan to meet anticipated load growth and was described in the company's Electric Resource Plan as the least cost option for meeting its capacity needs. On November 8, 1993, the PSCN issued an Interim Order granting resource planning approval (funding) for the proposed Piñon Pine Power Project, citing the advantages of flexibility, diversity, displacement of fuel, and reliability. As explained by SPPCo., additional attributes associated with the proposed Piñon Pine Power Project would be that coal is forecasted to remain substantially cheaper than natural gas as a fuel for generation; fuel flexibility would provide SPPCo. with the ability to use the most economical fuel available throughout the plant's life; the 104 MW capacity would be an excellent match with SPPCo.'s requirement for baseload generation in the late 1990s; the IGCC technology would be 10-15 percent more efficient than conventional baseload plants; and the proposed Piñon Pine Power Project would be key to holding the "coal option" open to SPPCo.

in the future. The fact that DOE would be funding 50 percent of the project makes it economically viable.

10-b In all your energy producing alternatives, do they require the same amount of water to produce, whether coal or natural gas?

ALTERNATIVE
TECHNOLOGIES
WATER CONSUMPTION

**RESPONSE:** A natural gas plant would use approximately 1.1 cfs/MWh, while the proposed Piñon Pine Power Plant would use approximately 1.67 cfs/MWh. Both natural gas and coal use approximately the same amount of water for the cooling process. The water conserving mitigation measure of dry cooling (which was added to the Final EIS, section 4.3.2.2) could be used by either. In addition, some water is utilized during the gasification process in the chemical reactors that form the fuel gases.

10-c Now you mention one of the reasons was economic, economy.... Well, for our tribe, all it would take is one natural disaster, because we depend on the lake for the revenue off of our fishing permits, reservation permits, boating permits.... That is what sustains our general fund. That provides health services, education. Sierra Pacific if it does find that it's not economically feasible could file bankruptcy. But our tribe has no options if a disaster did take place.

DISASTERS TRIBAL ECONOMY

RESPONSE: Part of the NEPA process is to anticipate the potential for disasters and to determine what mitigation measures would avoid or minimize the extent of a reasonably foreseeable impact. The use of conservative (worst-case) estimates to project impacts to air quality and water quality better ensure that no adverse impact would result. Risk is considered the product of probability and impact. Consequently, by reducing the likelihood of an event and/or limiting the impact from an event, risk is minimized. Mitigation measures described in section 4.3 of the Draft EIS and elaborated upon in the Final EIS include controls to prevent a technological upset during operation of the proposed plant, and construction following the Uniform Building Code, strict Seismic Zone 4 specifications to limit the impact from an earthquake, as well as numerous others.

# 11: Monte Martin, Environmental Director, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

11-a I'd like to make one additional comment. Normally when we're talking about environmental impacts and

TRIBAL IMPACTS

things, they are not as significant as they are to the tribe because the tribe's culture and things is tied up here. As a white person I have moved all over. Tribes don't move. They're here. And so, they are much more concerned about environmental impacts. And our culture tends to be if you abuse, move. Tribes can't do that.

RESPONSE: DOE and SPPCo. have discussed issues pertaining to the proposed project with tribal representatives; concerns and questions raised by the tribe have been considered and issues addressed accordingly. Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" (February 11, 1994) requires Federal agencies to identify and address disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations. As presented in the Draft and Final EIS (section 4.1.8.4), neither construction nor operation of the proposed project would disproportionately affect low income or minority communities or Native American Tribes.

Moreover, DOE has been proactive in its outreach to tribal communities. During the summer of 1992, DOE held formal public scoping meetings on the Pyramid Lake Paiute Reservation and in Fernley, Nevada (approximately 16.1 km or 10 miles from the reservation). Independent trips by DOE officials to discuss issues related to the proposed project also have taken place. SPPCo. has established an ongoing relationship with the Tribe to provide information and discuss issues related to proposed project planning. In January, 1993, SPPCo. representatives discussed the proposed project with the Tribal Chairman; in February, 1993, discussions continued with members of the Tribe's Water Resources Division and the Tribe's Water Resources Specialist; and in April, 1993, a slide presentation was made to the Tribal Council. DOE representatives visited the Pyramid Lake Paiute Indian Tribe on June 3, 1994, prior to the public hearings on the Draft EIS to discuss the hearing and the need for the Tribe to ask questions and provide comments on the draft document. A public hearing on the Draft EIS was held in Tribal Council Chambers, in Nixon, NV, on June, 21, 1994; the hearing was incorporated into a scheduled meeting of the Council. On June 23, 1994, an SPPCo. official spoke with members of the Tribal Council and offered to have corporate representatives meet with Tribal members to discuss any items of interest and to answer all questions regarding the proposed project and the Draft EIS. This meeting between SPPCo. and tribal representatives took place in Nixon, NV, on June 28, 1994. the meeting, the Tribe was encouraged by SPPCo. to submit written comments to DOE regarding the proposed project. SPPCo. later called a Tribal Council member on two occasions to encourage the Triba to submit written comments. On July 12, 1994, SPPCo. held a roundtable luncheon discussion with local business and community leaders in Reno, NV, to discuss the proposed Piñon Pine Power Project. Five tribal representatives were present at the meeting (along with approximately 50 business and community leaders). SPPCo. presented general issues regarding the proposed project and provided an opportunity for questions and answers. SPPCo. continues to make officials available to answer any questions on the proposed project. In response to comments raised during the comment period for the Draft EIS, changes have been made to the Final EIS, and additional air quality analyses were conducted for the reservation area and have been incorporated into the document (see section 4.1.2.1 of the Final EIS). SPPCo.'s coordination with the Pyramid Lake Paiute Indian Tribe would continue during operation of the proposed project (and beyond).

## 12: Frank Winnemucca, Tribal Rangers Volunteer, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

12-a They are using up the resource. That is why there is not NATURAL RESOURCES much left.

RESPONSE: The purpose of the NEPA process is to determine if a proposed action has the potential to adversely affect the consumption and quality of natural resources in the affected environment, either independently or when combined with other actions. DOE appreciates the concern over resource exploitation and has prepared this Environmental Impact Statement because it believed there was a possibility that the proposed project could significantly affect the quality of the human environment and thus warranted the detailed analysis required for an EIS. The analysis presented in Chapter 4 of the Draft and Final EIS determined that there would be no significant adverse impacts from the proposed action. In addition, DOE could either select the no-action alternative (i.e., not provide co-funding for the proposed project), or require that mitigation measures be adopted to avoid or minimize the extent of adverse impacts.

#### 13: Albert John, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

13-a I had one more question for the power guy. How many sites have you identified for this? You have talked about Valmy, you have talked about Tracy. What other sites?... Was any of those sites in the Reno area?... Because you were saying the economical impact. Like

ALTERNATIVE SITES RENO

I mean, if you are doing it in Reno, you have got all that labor force to choose from right there. But it seemed like to me, that is the sole judge which you guys were basing it on is because it's right out of Reno.... Is that a major factor in there?

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a.

SPPCo. also evaluated Reno; however it was not included in the detailed analysis because of factors such as physical space, railroad access, and the efficiencies associated with locating at an existing station. In addition, a plant located in Reno would require substantially more transmission facilities.

13-b Is there any different air quality standards between these outside counties and like in Reno, or are they all basically the same?... I know Reno is real bad. But I was just wondering like out there by the Tracy area, is that classified with the Reno area or is it classified in I think it's Storey County?... You are still kind of -- I mean, you still haven't answered my question. Is that a major reason why the Tracy Plant was chosen, though, over say like in Reno?

AIR QUALITY STANDARDS

RESPONSE: There are different air quality standards for different areas of Nevada. As explained in section 9.2 of both the Draft and the Final EIS, Section 107 of the Clean Air Act requires that the country be divided into air quality control regions. The 1977 amendments required state identification and formal EPA designation of areas that meet air quality standards (attainment areas) and those that do not (nonattainment areas). An area's classification, in part, determines what EPA and state actions must be taken to regulate air pollution. The proposed project would be constructed in an attainment area (subbasin 83: Tracy Segment). The Truckee Meadows Air Basin (subbasin 87), which includes the Reno-Sparks metropolitan area, is a nonattainment area for carbon monoxide and particulates. In addition, a nonattainment area for ozone incorporates the Truckee Meadows Air Basin and ends at the border of Washoe County. The primary regulatory mechanism for stationary sources is the State Implementation Plan (SIP), a mechanism used to impose emission controls in order to meet air quality standards. Nevada air quality standards are identical to national standards except for the addition of standards for hydrogen sulfide (H<sub>2</sub>S) and visibility, which are not included in the national standards. Because air quality varies greatly throughout the country, emission limits within SIPs also vary

substantially. The Clean Air Act also requires states to develop a program (the New Source Performance Standards or NSPS) for new or modified stationary sources of emissions to ensure that nationally applicable, technology-based emission limitations are enforced. Because the 1970 Clean Air Act contained no provision for protecting air quality that was cleaner than the national standards required (attainment areas), EPA subsequently implemented the Prevention of Significant Deterioration (PSD) Program. Under the PSD program, there are three classes of areas. Class I includes such areas as national parks and national wilderness areas; the rest of the country is a Class II area; there are no Class III areas. In addition to requiring compliance with air quality standards, PSD provisions contain elaborate air quality requirements. These provisions are based on established air quality "increments," numerically defined amounts of air quality degradation, which are based on area class and a fraction of the air quality standard. A PSD permit must be obtained before any new source can be installed. PSD review authority has been delegated to NDEP by the USEPA for all Nevada counties, except for Clark County and Washoe County. County agencies have the responsibility and authority for air quality in these counties.

The ability to comply with air quality standards was not a factor in selecting Tracy. During its site evaluation process (see section 2.2.1 of the Draft and Final EIS), SPPCo. determined that the proposed site needed to have existing generation facilities. Using subjective professional judgement, it evaluated air quality for three sites based on existing studies and data related to climatology, wind patterns, proximity to non-attainment areas, and other competing uses in the airshed. Scores for the three sites relating to these air quality factors were: Tracy-7; North Valmy-7; and Fort Churchill-8 (a score of 10 would have indicated no possible adverse impacts). Tracy was selected primarily because it had existing infrastructure and resources (i.e., transportation routes, control room, natural gas capability, transmission capability, sufficient water rights), it was originally designed to allow for conversion to coal, and its proximity to Reno would reduce construction and operating costs.

13-c What is the DOE - I mean, you guys know the difference between Tracy and like putting it in Reno. What was your guys?... Kind of that. I mean, to me, it's just more or less based on - I mean, you are going to have a lot of employment and stuff like that. So basically that is what it is based on, what you are putting into the economy of Reno. But what I see is just we're taking the emissions or whatever comes out of that system down this way, which I say if they want, to me, it would be more logical to put it in Reno because they are the ones that are probably going to benefit from it.

ALTERNATIVE SITES RENO

I think they will have more stricter rules than outside in the county like Storey or Lyon.

**RESPONSE:** Responses to comments on alternative sites were provided previously. Please see Responses to Comments 3-a (site selection in general) and 13-a (Reno-specific). A response to the comment regarding air quality standards is provided in the previous comment (13-b).

## 14: Mary Dodd, Tribal Council, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

14-a I have a question. Regarding the ash from the coal, what type of storage area will the ash be in?... There will also be limestone used?... Will the grade of the limestone be consistent or would that change?... What area would that be coming from, the limestone?... Would it be of a high grade?... Will that change the quality of the emissions that are coming out?

ASH STORAGE LIMESTONE

RESPONSE: Section 2.1.3 of the Draft and Final EIS describe the use and handling of limestone and ash storage facilities. Cooled solid waste (LASH) consisting of ash, fines, and sulfated limestone from the sulfation unit would be continuously conveyed to the solid waste storage silo using an enclosed belt conveyor system. The silo would have a 5-day storage capacity. The material from the limestone silo would be fed at a controlled rate and blended with the coal on the same conveyor line that feeds the gasifier island. The source of limestone has not been identified at this time. However, it is likely that it would come from a local Nevada company. Limestone would be used to capture some sulfur compounds in the coal. A broad range of limestones would be acceptable, and slight variations in grade and calcium/magnesium proportions would be expected over time; the quality of limestone would not affect emissions.

#### 15: Norman Harry, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

15-a I have a couple questions for Sierra Pacific's representative in regards to water rights. What is the total amount of water rights that was adjudicated in the Orr Ditch to Sierra Pacific, in accordance with the plant right now? Well, according to this chart, you are using 1,562 acre feet I guess on an annual basis at the Tracy

**WATER RIGHTS** 

Power Plant. In less than 20 years, you'll be increasing that amount to over and above, up to 1,216 acre feet. I guess the question I have for you is where or how does Sierra Pacific plan to get its water rights to operate this plant?... That is total, consumptive with your wells, with the ground water.... So in essence, you would be kind of switching your water rights to maintain a certain amount.

**RESPONSE:** A response to comments on water rights was provided previously. Please see Response to Comment 5-c.

DOE recognizes that Table 4.1.4-1 of the Draft EIS was confusing; this table has been revised for the Final EIS so that it can be more easily interpreted. The water rights (both surface and groundwater) currently held by SPPCo. at the Tracy site would be used for the proposed project and total 4,100 acre-feet per year. During the operation of the plant (1997 through 2011), the average water consumption rate would be 2,806 acre-feet per year (or 3.9 cfs). This averaged amount is approximately 68 percent of SPPCo.'s total water rights. The maximum water consumption expected would occur during calendar year 1999 and would total 3,057 acre-feet. This amount would represent 75 percent of SPPCo.'s total water rights.

#### 16: Kenny Miller, Public Hearing-Nixon, 6/21/94

16-a I have a question for Sierra Pacific....We were talking about spills and cleanup. Is there an emergency planning committee with Sierra Pacific or are you affiliated with the county, state or cities in assisting in a cleanup?...Yeah, we were at one of the workshops, Mervin and I, and we came up with a question. That is why I was kind of concerned about it. Because they did a scenario there similar to Dunsmuir in California, and we weren't notified in that scenario when that spill occurred if somewhere along the state line. chemicals finally made it down here and we said, hey, did you call the tribe? There was a big question about that, and I'd like to see some kind of a plan available to the tribe so we may be notified when that spill occurs so we could take some action...down here.... How far along in the planning are you?... I was thinking about the

COAL SPILLS COAL TRANSPORTATION EMERGENCY RESPONSE amount of coal that will be brought in by rail car, and if there is ever an accident with those things, you know, you are going to have a lot of coal to clean up and is there enough equipment in that plan to cover that....Anything could happen along that river between those points....I'd like to comment about minimizing your response time.

**RESPONSE:** A response to comments on coal spills during rail transport was provided previously. Please see Response to Comment 1-b.

# 17: Alvin James, Tribal Council, Pyramid Lake Paiute Indian Tribe, Public Hearing-Nixon, 6/21/94

17-a ....I'm with the Tribal Council. As many of you know, the Bureau of Indian affairs has direct responsibility with the tribe, and I was wondering if you forwarded any of these documents to the...central office at the Bureau....

We'd like to have time to do that too so that we could have the benefit of their analysis of this document....

They have local staff. But it's my understanding that central office has environmental people on staff to review these things.

BUREAU OF INDIAN AFFAIRS

**RESPONSE:** A copy of the Draft EIS was sent to both the central and local offices of the Bureau of Indian Affairs.

#### 18: Mervin Wright, Jr., Water Resources Director, Pyramid Lake Paiute Indian Tribe, Written Comment, 6/21/94

18-a In dealing with the water resources of the reservation, namely water rights, concerns related to water rights, water quality and water quantity are in focus. As Pyramid Lake is subject to every activity upstream of the reservation, it is without question that any increased demand on the Truckee River is a concern. Since Nevada is the driest state in the union, and the water quantity is of utmost importance, any development upstream is viewed as a threat until assurance can be provided to the Tribe. The recent 6 year drought may not be out of the ordinary as some people speculate.

WATER SUPPLY

The climatology of the region may be impossible to understand by many businesses that depend on water for sustenance.

**RESPONSE:** Section 4.1.4 of the Draft and the Final EIS presented the conclusion that no adverse impacts to water quantity or water quality would occur as a result of the proposed project. While the endangered Cui-ui sucker and threatened Lahontan cutthroat trout are the two fish species potentially affected by changes in water diversion at the proposed project site, the USFWS determined that the project would not affect these species, specifically stating that the Cui-ui Recovery Plan assumed the exercise of all existing SPPCo. water rights in its hydrological foundation (see letter provided in Appendix B of either document).

A response to comments on water rights issues was provided previously. Please see Response to Comment 5-c.

Recognizing concerns regarding water usage, SPPCo. incorporated water conserving measures into the design and operation of the proposed project (see section 4.1.4.1 of the Draft or the Final EIS). In addition, a discussion of the cooling options analysis performed by SPPCo. has been added to the mitigation section of the Final EIS (see section 4.3.2.2).

No impact to the water quality in the Truckee River is expected. The proposed plant would be operated as a zero discharge facility, meaning that no water from the plant would be discharged into the Truckee River (see section 4.1.4.2 of either the Draft or the Final EIS). Discharges from the proposed project would be directed to the new double-lined evaporation pond; no discharge into the Truckee River would occur from this new pond. Stormwater would be routed to the cooling pond, which can accommodate approximately 43 acre-feet of runoff without overflowing. There are no projected changes in the use of the cooling pond as a result of the proposed project.

18-b If the Tracy Clark Station (TCS) has water rights dated 1961-1974, how will the Pinion Pine Power Plant (Power Plant) divert water under extreme drought conditions as experienced in 1992?

DROUGHT WATER RIGHTS

**RESPONSE:** A response to comments on surface water rights issues was provided previously. Please see Response to Comment 5-c.

SPPCo. does not anticipate any change in water withdrawals during drought or low flow conditions. During 1992, the worst recorded drought in the history of the Truckee River, the lowest daily mean flow recorded at the Tracy gauge after plant withdrawal was 36 cfs (July 25, 1992); the lowest monthly mean flow was higher. SPPCo. anticipates that adequate water would be available to meet the requirements of the proposed project.

Please note that the Final EIS (section 3.4.1) was revised to clarify that the dates, 1961-1974, pertain to underground water rights of 600 acre-feet per year.

18-c Today as we have come to know, priorities are exercised, but politics plays a larger role than we anticipate. Provided that the Tribe's first and second claim under the Orr Ditch Decree are subject to return flows, will TCS exercise the same control of water flows in the lower river as Sierra Pacific Power Company's (SPPC) 40 cfs right?

WATER RIGHTS

**RESPONSE:** A response to comments on water rights was provided previously. Please see Response to Comment 5-c.

18-d Out-takes have not been addressed as to the points of diversion at the Power Plant. What type of out-take will be supplying the Power Plant with Truckee River water?

WATER DIVERSION

**RESPONSE:** A response to comments on points of diversion was provided previously. Please see Response to Comment 5-d.

18-e Has SPPC determined, if necessary, to dedicate water rights for use at the Power Plant?

WATER RIGHTS

**RESPONSE:** A response to comments on water rights was provided previously. Please see Response to Comment 5-c.

SPPCo. has projected water consumption rates for the Tracy Power Station with and without the proposed project through the year 2011 (see Table 4.1.4.1 in both the Draft and the Final EIS); no additional water rights would be required.

18-f Acid rain will pocloud bursts and smokestacks will sarea as winds gen river corridor. experienced in other alternative practic. What do you advit the event that this

RESPONSE: A response

The U.S. Fish and Wildlife Service has reviewed the Biological Assessment of the proposed project's impacts to the Cui-ui and Lahontan Cutthroat Trout and made a determination (see Appendix B in both the Draft and the Final EIS) of "no effect." Consequently, no adverse impact to the fishery at Pyramid Lake would be expected.

### 19: Monte Martin, Environmental Director, Pyramid Lake Paiute Indian Tribe, Written Comment, 6/21/94

19-a We have a major concern about air pollution. This is a pilot demonstration project. One of its purposes is to "assess long term reliability". Long term reliability is vital. "Upsets" drastically increase pollution levels. Upsets are not controlled by existing state or Federal regulations. This is a large expensive project which we will be our neighbor for 30 or more years even if the technology proves unreliable.

REĹIABILITY UPSETS

**RESPONSE:** A response to comments on technology risk and upsets was provided previously. Please see Response to Comment 4-a.

19-b 100% destruction cannot be achieved by incineration. No machine is 100% efficient. Even very small percent inefficiencies become vast amounts of material when hundreds of tons per day are being incinerated. The project wants to burn 880 tons (some places in the report say 816-880 tons) a day. Even at 99.9% capture efficiency it would still release almost a ton a day of Assuming the projected amount of particulates. particulate matter 135 Tons of particulate matter is not overly optimistic; that is still a lot of fly ash. It is magnified because it is 365 days a year, year after year. Sulfur Dioxide is projected at 225 tons per year. Sulfur Dioxide combines with water vapor in the air to make The report optimistically assumes 6.4 tons of sulfuric acid mist a year. (4-10) That is a lot of acid. It is worth noting that the "no-action alternative" shows 63 tons per year for particulates and 53 tons per year of SOx much less in both cases. (p 2-30) There is also projected to be 25.7 tons of Volatile Organic Compounds (VOC(s)) VOC(s) are not conducive to good health.

ACID MIST
CONTROL EFFICIENCIES
PARTICULATES
SULFUR DIOXIDE
VOCs

**RESPONSE:** A responses to comments on local air quality and acid rain were provided previously. Please see Responses to Comments 4-d, 8-d, and 40-m.

The 135 tons of particulates was the estimated emission rate for one year, however, since publication of the Draft EIS, SPPCo. has refined the project design (see section 2.0 of the Final EIS) and the projected emissions of PM<sub>10</sub> has changed to 123 tons per year, or approximately 674 pounds per day. (This is equivalent to a 3 foot by 3 foot by 2 foot box completely filled with fine dust). Projected emission rates for particulates and sulfur dioxide would exceed significant emission rates (tons/year). The significant emission rate for volatile organic compounds (VOCs) would not be exceeded. The 1990 Emissions Inventory of Ozone Precursors for Washoe County identified various sources of VOC emissions, which total 16,154 tons/year. The 27.5 tons projected to be emitted from the proposed project would result in a less-than-1 percent (0.16) increase. Because the maximum predicted PM<sub>10</sub> and SO<sub>2</sub> impacts were determined to be greater than the significance levels, a full impact analysis was performed for SPPCo.'s PSD permit. It was found that the proposed project would not contribute substantially to any predicted exceedence of the particulate (PM<sub>10</sub>) standards. The modeling for sulfur dioxide (SO<sub>2</sub>) showed that emissions would be well below ambient standards under design coal conditions and would still be in compliance for a high-sulfur content coal, that may be burned during the demonstration phase.

A discussion on sulfuric acid mist is provided in the response to a subsequent comment. Please see Response to Comment 40-m.

19-c We are concerned that modeling for pollution dispersion is not site specific and does not take into account the peculiarities of Northern Nevada meteorology and topography. Historically Northern Nevada has 150-180 inversions a year. These inversions trap pollutants into a shallow zone of air from ground level to about 600 feet. This means much of the time the amount of pollution Sierra Pacific is permitted to dump into the air will stay close to the ground and will not disperse well.

INVERSIONS SITE-SPECIFIC MODELING

**RESPONSE:** A response to comments on local air quality were provided previously. Please see Response to Comment 4-d.

The reduction of stack height from 91 meters (300 feet) to 68.5 meters (225 feet), as described in the Final EIS (see section 2.0), further minimizes any dispersion and reduces the likelihood that any plume

rise would penetrate an inversion layer at 183 meters (600 feet) (if an inversion layer would exist at that height). CTDMPLUS modeling carried out for the 68.5-meter (225-foot) stack did not indicate plume penetration of inversion layers and thus, predicted maximum pollutant concentration conditions.

19-d Northern Nevada has the second all time record for a stagnating air mass on the North American Continent. For up to 35 days at a time the air does not move more than 5 miles. This means the same air gets concentrated with pollution because there is very little air movements for long periods of time. Displacement (Mixing) of air is the major mechanism used to keep pollution levels from concentrating. Your predicted impacts on micro grams per cubic meter of air on table 4.1.2-4 seem to be very optimistic and unrealistic in light of points #3, 4, and 5 of this paper. When the air is displaced it is much more concentrated than one would expect and have adverse affects [sic] much farther down wind.

AIR MIXING DOWNWIND EFFECTS EMISSIONS

**RESPONSE:** Responses to comments on local air quality were provided previously. Please see Responses to Comments 4-d and 19-c.

19-е The reservation's major population center is Wadsworth. Wadsworth is less 15 miles east of the Project. The prevailing westerly winds make Wadsworth and a non tribal town, Fernley down wind most of the time. There are mountain ranges on the North and South of the project. They will tend to trap pollutants and funnel them and the wind when there is any flows east. The Mountain ranges funnel effect ends at Wadsworth Concerns #3 and 4 indicate an amplification of the pollution problem. The area of Wadsworth/Fernley is already environmentally stressed by the emissions from Nevada Cement. It is my understanding that it burns about 10 tons an hour of coal. Some people in the area already suffer respiratory distress from existing air pollution. They do not need more large scale air pollution.

EMISSIONS CUMULATIVE IMPACTS NEVADA CEMENT SITE-SPECIFIC MODELING

**RESPONSE:** A response to comments on local air quality was provided previously. Please see Response to Comment 4-d.

Background air quality is defined as the air quality in the absence of any proposed sources. Background levels can be determined from existing air quality data, model calculations of emission sources in an area, or a combination of the two. EPA requires that an emissions inventory must be developed and include sources within the significant impact area and sources within 50 km (31 miles) of the significant impact area for a PSD increment analysis if pollutant emissions are expected to exceed significance levels. EPA also requires that all "nearby" (any point source expected to cause a significant concentration gradient in the vicinity of a proposed source) sources be explicitly modeled as part of the ambient air quality modeling analysis. A PSD source inventory and lists of particulate matter (PM<sub>10</sub>) and sulfur dioxide (SO<sub>2</sub>) sources in Nevada were provided by the NDEP and Washoe County, which included Nevada Cement, Concrete Products, Inc., Barrick, Atlas, Paiute Pipeline Co., Santa Fe Pacific, and numerous other sources. These lists are provided as an appendix to the Air Quality Technical Report, which is available in the reading rooms. The effects of these sources identified on these lists were incorporated into the air quality modeling performed (see section 4.1.2.1 of the Draft and the Final EIS).

19-f Coal contains trace amounts of heavy metals (zinc, mercury, antimony, chromium, beryllium, and lead) which are toxic and often times concentrate as they are absorbed and travel up the trophic levels of the food chain. These materials start out as air born [sic] particles but many will get into the soil and water as gravity causes them to drop out, as they serve as a basis for water vapor to condense on etc. This is cumulative for as long as the plant operates. Multi-year accumulation needs to be addressed.

CUMULATIVE IMPACTS
HEAVY METALS

**RESPONSE:** Responses to comments on trace metals were provided previously. Please see Responses to Comments 4-e and 4-f.

19-g The handling of 48,545 tons per year of LASH assumes that the Lockwood land fill will remain open. It is my understanding that Lockwood is not a 258 approved landfill. It may be closed before the end of the century. The no-action alternative produces no LASH.

LOCKWOOD LANDFILL

**RESPONSE:** 40 CFR Part 258, Criteria for Municipal Solid Waste Landfills, became effective on October 9, 1993. The regulations establish minimum national criteria under the Resource Conservation and Recovery Act (RCRA) and the Clean Water Act (CWA) and apply to all new and existing municipal

solid waste landfills. Any landfill not in compliance with Part 258 requirements is considered an open dump, which is prohibited under RCRA. The Lockwood landfill is in compliance with Part 258 regulations and will continue operations (personal communication with Mark Franchi, Manager, Lockwood Landfill, July 15, 1994) during its anticipated life expectancy of 122 years. Section 4.1.10 of the Final EIS, now indicates that the landfill is Part 258-approved. In addition, a discussion of Part 258 requirements was added to section 9.10 of the Final EIS.

19-h Eastern coal burns are planned for "short term testing" what ever that means. Eastern coal is much higher in sulfur thus much higher SOx will result for the duration of the testing. Because so much fuel is being consumed even small inefficiencies are huge amounts of pollutants.

EASTERN COAL EMISSIONS

RESPONSE: As part of the Piñon Pine Clean Coal Technology project, the DOE is interested in the feasibility of burning coal with a relatively high sulfur content. Section 2.1.3 of the Final EIS clarifies that a trial burn would be performed using a single shipment of high sulfur eastern coal (greater than 1 percent sulfur content) pending PSCN approval and that the trial burn would not last more than 3 weeks, after which the use of design coal would resume. A discussion of potential impacts to air quality from the trial burn was added to section 4.1.2 of the Final EIS. For the proposed trial burn demonstration, the only pollutant emission rate that would increase over that of the design coal case would be SO<sub>2</sub> emissions from the sulfation combustor stack. As an upper limit, a total Piñon Pine emission rate of about 0.5 lb/MMBtu of SO<sub>2</sub> is assumed for the trial burn. The resulting emission rate for the sulfation combustor would then be 406.3 lb/hr. The remainder of the entire SO<sub>2</sub> emission inventory would be identical to that of the design coal case. Results of the CTDMPLUS run with the densely-spaced receptors indicate that the short-term demonstration project's emissions would be in compliance with ambient SO<sub>2</sub> standards. This short-term trial burn would not significantly affect the annual average. Results from the initial CTDMPLUS run showed that even if the trial burn lasted a full year, the predicted annual average (63  $\mu$ g/m<sup>3</sup> from CTDMPLUS plus 13  $\mu$ g/m<sup>3</sup> as a conservative background) would still be in compliance with ambient SO<sub>2</sub> standards.

19-i We are also wondering about the temperature effects your cooling ponds will have on the Truckee river. Your report mentions one pond is lined with impervious material the other is not. (3-24) Although the calculated inflow is "less than .1% of the flow in the river (at normal flow conditions of over 400 cfs) there are often

COOLING PONDS CUI-UI WATER TEMPERATURE times when the flow is not "normal". The report addresses TDS increases but does not seem to address possible temperature increases caused by seepage from the cooling ponds or from ground water in contact with the cooling ponds. Most plants operate at around 30-35% efficiency rates and throw the rest of the energy out as waste heat. Burning 800 tons a day of coal creates a lot of heat to get rid of. River temperature is very significant during spawning of the federally listed Lahontan cutthroat trout and the Cui-ui, an endangered species. Although the Cui-ui do not get past Derby Dam, your report suggests to me a need to worry about possible water temperature changes from Tracy Clark down to Derby Dam.

RESPONSE: A response to comments on potential temperature changes to the Truckee River was provided previously. Please see Response to Comment 4-h.

19-j There is some question about coal storage. Are the areas open or closed? What provisions have been made to assure that there will be minimal coal dust from unloading, storage, transportation and wind? What about a fire in the coal storage areas? Coal dust has a significant explosion hazard.

COAL STORAGE FIRE HAZARD

RESPONSE: Section 2.1.3 of the Draft and the Final EIS discuss coal storage. Coal storage and handling would be operated and maintained under closed conditions. Coal would be received at an enclosed unloading station and transferred to a raw coal storage facility. The unloading station would consist of two receiving hoppers, each equipped with a vibrating-type unloading feeder that would feed the raw coal onto conveyor systems. All material handling systems would be enclosed and supplied with dust collection systems for environmental control. The coal would be stored in one large field-erected storage facility that would be sized to store more than 16,000 tons of coal. This structure would have the capacity to store a 20-day supply of coal. The storage facility would be equipped with vent filters to control dust emissions. Material in the raw coal storage facility would be reclaimed by the automated coal pile reclaimer or discharged by emergency pile dischargers and vibratory feeders onto the covered raw coal collecting conveyor. This covered conveyor would transfer the coal to the coal crushing, drying, and screening area. The Draft and Final EIS (section 4.1.9) discuss safety concerns associated with coal and recognizes that there is some potential for fire or ignitability from the coal storage or coal dust build-up in the coal crushing and handling systems. The Encyclopedia of Occupational Health and

<u>Safety</u> explains that any combustible solid material, in finely divided form, can give rise to a dust explosion hazard if the dust becomes suspended in air in sufficient concentration and subjected to a source of ignition. The risk of dust explosion can be avoided by preventing the formation of explosive clouds and eliminating ignition sources. Workers at the proposed Piñon Pine Power Plant would be trained in proper management procedures. Although, dust control systems and fire suppression equipment have not yet been designed, they would follow standard engineering protocols and would comply with all regulatory requirements.

19-k Pyramid is not very far from the proposed plant as the crow flies. Its economy depends on tourism and recreational activities. It does not want a black haze of particulates in the air over the lake. Most of the tourists are go [sic] to the side of the lake closest to the proposed coal plant.

EMISSIONS PYRAMID LAKE VISIBILITY

**RESPONSE:** Responses to comments on local air quality and visibility were provided previously. Please see Responses to Comments 4-d and 4-i.

19-1 If the Tribes environmental interests are ignored or minimized it may become necessary for the Tribe to institute its own air quality standards. Although the Tribe's standards would only directly affect tribal space they would in directly [sic] affect those outside near by who need discharge permits. Having a second large scale coal burning facility close to the reservation would certainly make air quality standards more necessary and make it harder to determine who was doing what to the air.

AIR QUALITY STANDARDS

**RESPONSE:** A response to comments on tribal standards was provided previously. Please see Response to Comment 4-k.

19-m The report mentions other proposed sites it seems to me that the most logical place for such a project is North Valmy due to its remote location and because the area already has a coal fired facility. The major reason for excluding this site seems to be that it would cost Sierra Pacific a little more to not have natural gas alternatives and to construct a new control room and could use fewer

ALTERNATIVE SITES
EXTERNALITIES
NO-ACTION ALTERNATIVE
VALMY

people to run the plant. The Federal Government is paying 50% or \$135 million of the construction costs. Sierra Pacific is getting a large generation system at a much lower cost than if it had to go it alone. The project could at least be put where it would cause minimal problems with population and endangered North Valmy has a better Score for environmental acceptability in the DEIS you gave us to study and make notes on. (p 2-23). The statement that a no - action to this project would likely result in the same plant in the same place burning natural gas being built is almost ludicrous. There is a \$135 million reason why it is in Sierra Pacific's best interest to build a subsidized plant. If the Federal Government (DOE) is going to significantly contribute to the construction costs of the power plant the Federal Government should insist that the plant be built with direct linear weighting of "externalities" (I.E. environmental and conservation It is interesting to note that in all the mentioned environmental impacts there is a large decrease in the no action alternative compared to the coal plan. Clearly even the most modern state of the art coal burning plants place a heavier burden on the environment than alternative methods available to Sierra Pacific.

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a.

DOE's no-action alternative discussed in the Draft and the Final EIS represents the most likely course of action SPPCo. would pursue (at this time) if DOE funding was not provided. Building and operating the same plant at the same location would allow SPPCo. to utilize the research and studies already conducted for the proposed Piñon Pine Power Project. However, as the Draft and the Final EIS stated, no facility would be built without Public Service Commission of Nevada (PSCN) approval, which requires consideration of externalities.

The Draft EIS did not specifically include a discussion on externalities, but references the Electric Resource Plan hearings in which the applicable externalities for the proposed project were discussed. The Draft and Final EIS (section 1.3.3) indicate that the proposed project had received resource planning

approval by the Public Service Commission of Nevada (PSCN). Resource planning is governed by both the Nevada Revised Statutes (NRS 704.746) and the Nevada Administrative Code (NAC 704.9365).

These sections of Nevada law and regulations, in general, require public utilities, such as SPPCo., to identify, quantify, and consider environmental and economic costs and benefits associated with potential sources of electric power as part of its resource planning process. Resource planning approval and subsequent issuance by the PSCN of a State Utility Environmental Protection Act (UEPA) permit is required before SPPCo. could construct the proposed project (see NRS 704.820 through 704.900).

The proposed project was included in the 1993-2012 Electric Resource Plan filed with the PSCN as Docket #92-7001 and refiled as Docket #93-4001. The Final EIS includes these docket numbers for the resource planning hearings. A full discussion and consideration of environmental and economic externalities was included in these dockets. In granting full resource planning approval of the project (Order dated November 12, 1993), the PSCN discussed externalities of SPPCo.'s preferred plan (which included the proposed Piñon Pine Power Project). All or portions of the docket materials are available for inspection at the PSCN offices located at 727 Fairview Drive in Carson City, NV.

#### 20: Paul Stieger, Public Hearing-Rainbow Bend, 6/22/94

20-a ....I live in Reno. And for the past 42 years..., I have been involved with the completion and putting into service 22 coal-fired, gas-fired steam generating plants, including five 750 megawatt units for Pacific Gas and Electric Company. I'm heartily in favor of this type of technology. I'm very happy to see the progress of it, and I certainly hope the general public feels as I do.

**GENERAL** 

**RESPONSE:** Comment is noted.

#### 21: George Foster, Public Hearing-Rainbow Bend, 6/22/94

21-a I really don't have much as far as comments go, other than to say that I favor the project. I'm a resident of Storey County. I feel that there's going to be a definite beneficial impact to Storey County as far as taxes are concerned. I represent people that work on these type of

GENERAL TAX BENEFITS projects, plumbers and pipefitters, welders. They all support the project. I think that you have done an excellent job explaining what the project consists of. I think you have really done good research on what positive and negative impacts it would have. And I'm really pleased with the way things are going, and hope to see the project start as soon as possible.

**RESPONSE:** Comment is noted.

## 22: Dean Haymore, Storey County Building Official and Planning Administrator, Public Hearing-Rainbow Bend, 6/22/94

22-a I'm a Storey County building official and planning administrator, and it would be one of my things to watch over -- everything fall down -- watch over this project for Storey County and to make sure that this environmental impact study is done correctly and thoroughly to make sure that we protect the surrounding area. There's a couple of things, and I have not had a chance and I will have written response to you, but a few things is the noise impact of the steam blowoffs and stuff needs to be studied for the livestock mitigation to make sure we take precaution of that. Also with this noise blowoff, and I'm not exactly sure how or when it will happen, but maybe some posting on the I-80 so cars aren't alarmed or get shocked with the loud blasts of noise, that mitigation.

NOISE IMPACTS

RESPONSE: Noise, as stated in the Draft and Final EIS (section 3.11), is of environmental concern because it can cause both annoyance and adverse health effects to both humans and animals. Section 4.1.11 of the Draft and Final EIS explains that during the cleanup phase, the activity known as "steam blowing" has the potential to create the most noticeable noise. The temporary (1-to-2-week period) and short duration (about 2 1/2 minutes each) steam blowing activity would cause audible levels of noise. At the near-source receptor (122 meters or 400 feet away), instantaneous steam blowing levels would be, on average, 92 dBA, with maximum of 110 dBA. The maximum noise is equivalent to an unmuffled motorcycle at 0.9 meters (3 feet) which is considered very loud (see Table 3.11-1 in the Draft and Final EIS). However, the proposed mitigation measure (i.e., to provide advance warning and temporary housing, if desired) for the noise from steam-blowing has been sufficient in the past and is the only measure used by similar projects. Thus, it is anticipated that signs would not be necessary. However,

SPPCo. would notify NDOT before any steam-blowing activity, providing sufficient lead-time so the agency could post warning signs if NDOT believed it was warranted.

The Final EIS (section 4.1.6.2) includes more information on potential noise impacts for livestock and other animals. Studies have shown that when cattle and sheep were exposed to sonic booms for four days, the effects of noises were not unusual and that the animals returned quickly to grazing or other normal activities when interrupted (Espmark et al., 1974). In addition, Busnel and Briot (1980) observed that birds, such as gulls, pigeons, jays and various forms of wildlife were abundant in land areas adjacent to some airport runways. They concluded that animal populations grew independently of the amount of air traffic. Other observations showed that migratory birds do not hesitate to utilize airport environs as nesting places during migration even in the presence of noise levels up to 120 dB. Peregrine falcons were subjected to low-level jet aircraft and mid to high altitude sonic booms to assess detrimental effects of both young and adults. The noise pollution most often evoked only minor responses and never interfered with reproduction. Reoccupancy rates for sites experimentally distributed were at or above normal for the following year. It was concluded that this noise had no extreme adverse effects on the study birds. No impact to livestock is expected from noise associated with the proposed project.

22-b I also just had, briefly, see there is no money funded or study done for the decommission of Piñon Pine. Hopefully it won't be decommissioned for 50 years or more, but I'd like to see Sierra Pacific definitely put that in a cost factor analysis study to make sure there is the proper decommissioning of the plant when that time comes forward.

**DECOMMISSIONING** 

RESPONSE: The expected lifespan of the proposed Piñon Pine Power Project is 35 years. As stated in SPPCo.'s Electric Resource Plan (available at the Public Service Commission of Nevada office in Carson City), at that time, SPPCo. would have three options: (1) to extend the life of the plant by refurbishing or replacing equipment; (2) to retire the plant and encapsulate it if needed; and (3) to demolish the plant. SPPCo. has prepared a decommissioning report for existing power generation facilities. This 1989 report provides details on three options for decommissioning each generation unit, including cost estimates associated with each option. For all scenarios, waste and other materials would be removed from the site and properly disposed. The responsibility for decommissioning rests with the PSCN; Storey County is provided an opportunity to participate during this process. The proper time to

conduct a decommissioning study is after final design; and SPPCo. would conduct a study if requested to do so by PSCN.

22-c Besides that, as myself, all the information that has been provided, I think DOE has done an excellent job, Sierra Pacific has done an excellent job. And in partnership, Storey County hopefully will do an excellent job to make sure this project takes all the responsible necessary impacts and studies to make sure it is a good, clean and beneficial project for the community of northern Nevada.

**GENERAL** 

**RESPONSE:** Comment is noted.

#### 23: Bill Hollis, FOXX Systems, Public Hearing-Rainbow Bend, 6/22/94

23-a A couple of my questions is where is this coal coming COAL SOURCE from?... High sulfur content?... I said high sulfur SULFUR CONTENT content?

**RESPONSE:** As described in section 2.1.3 of the Draft and Final EIS, the primary fuel for the project would be western low-sulfur (0.4-0.6 percent) bituminous or subbituminous coal from either Utah or Wyoming. Southern Utah Fuel Company (SUFCO) coal is the design coal. High-sulfur coals (1-4 percent) from eastern areas, such as Pennsylvania, would be used for a limited-duration demonstration test, pending approval by the Nevada Division of Environmental Protection (NDEP).

23-b Your study shows 800 tons a day of coal being used. How much ash is going to be generated from that?... Okay. So about 135 tons a day are likely to be going to our Lockwood land fill out there.... I think we ought to talk to the commission about raising the price up there.

LASH DISPOSAL

**RESPONSE:** As explained in section 4.1.10 of the Draft and Final EIS, if LASH were to be landfilled, the Lockwood landfill would be used. This landfill has a life expectancy of 122 years. If the maximum 134 tons/day of solid waste is generated it could potentially decrease the lifespan of the landfill 1 year for every 60 years of the landfill's operation. Consequently, for the 35-year life expectancy of the proposed project, the landfill could close approximately 2 years earlier than planned. Currently, disposal

cost for the proposed project is expected to be about \$2.00/ton of solid waste if transportation is arranged by SPPCo.

#### 24: Mark LeBlanc, Public Hearing-Rainbow Bend, 6/22/94

24-a ....Either somebody has misprinted the numbers or they are slipping on the accounting department. They are currently putting out 411 megawatts with the oil, natural gas fired plant now, and they are going to be turning out 104 megawatts with this coal-fired plant? That's 307 megawatt drop in the amount of power they can generate.... This is going to add to their power generation capability.... All right. I thought this was replacement for.

**POWER GENERATION** 

**RESPONSE:** The proposed Piñon Pine Power Project would provide additional power generation capability. SPPCo.'s need for this additional power was provided previously. Please see Response to Comment 10-a.

#### 25: Bill Hollis, FOXX Systems, Public Hearing-Rainbow Bend, 6/22/94

25-a I had one more question of whether or not how much of that power is going to be available for the local area. At the present time not all of that power out there comes through Reno-Sparks area, it goes onto interchange to everyone else.

**ELECTRICITY RECIPIENTS** 

**RESPONSE:** The electricity generated by the proposed Piñon Pine Power Plant would be distributed over the utility grid in a typical fashion to assist in meeting the electrical needs of SPPCo.'s customers.

#### 26: Brad Bryant, Public Hearing-Rainbow Bend, 6/22/94

26-a Will they have to upgrade the Tracy plant now that's in existence, or is that in good shape, or is that in bad shape?... You have got two units there?... Regardless of the conditions of existing Tracy, it has nothing to do with this one there.... It will be separate, right?

TRACY STATION UNITS

**RESPONSE:** A complete description of the facilities at Tracy Station is provided in section 3.1 of the Draft and Final EIS. Existing Tracy units are fully operational and will continue to be so for the foreseeable future. The proposed Piñon Pine Power Project would be separate from the other seven generating units; SPPCo. would utilize all units.

### 27: Peter S. Tuttus, Storey County Planning Commission, Written Comment-Rainbow Bend, 6/22/94

27-a Points of Contact - Clean Coal Projects in U.S.

**GENERAL** 

RESPONSE: Information on the Clean Coal Technology Program is available from:

Office of Clean Coal Technology U.S. Department of Energy Washington, DC 20585 phone: (301) 903-9451

### 28: George Foster, Plumbers and Pipefitters Local #350, Written Comment-Rainbow Bend, 6/22/94

28-a I favor the project.

**GENERAL** 

**RESPONSE:** Comment is noted.

#### 29: John Paul Williams, Boilermakers Union Local 549, Public Hearing-Reno, 6/23/94

29-a ...I'd like to begin by saying, first of all, on behalf of the Boilermakers, that they and I support this project and we want to see this project built at this location. However, we would like, while we want to see this project built, we want to see it built with the minimum possible impacts on the environment consistent with an economically feasible operation.

**GENERAL** 

**RESPONSE:** Comment is noted.

My first concern is about emissions of nitrogen oxides. 29-b Now Mr. Jack Motter, a representative from Sierra Pacific, appeared at the scoping meeting. He said he thought nitrogen oxide emissions would be about .2 pounds per million BTUs of heat produced by the power plant. Now, I'm very concerned because this is not a relatively clean emission rate for a coal burning power plant...the Piñon Plant emission rate, Mr. Motter said it would be about a .2....I tried to do my own calculations assuming 141 pounds of hourly emissions, 887 million BTUs. We see a nitrogen oxide emission rate of about .158. But as I see here, here's a list of about 17 other power plants already built, all or most of them already built and under operation in the United States, some of them as much as eight years old, that are burning with far lower NO<sub>x</sub> emission rates than this proposed power plant. I'm very concerned. This plant would possibly have more emissions than a conventional power plant when it comes to that particular pollutant of NO<sub>r</sub>.

EMISSIONS OXIDES OF NITROGEN

**RESPONSE:** DOE reviewed the list presented by the commenter and noted the geographic location and technologies utilized by the referenced plants. Installation of NO<sub>x</sub> controls often is in response to regulatory requirements where a plant could not otherwise comply with air quality standards. The proposed Piñon Pine Power Plant can meet Federal and state regulatory requirements without the use of these ancillary control devices. It should also be noted that the proposed intent of this project is to illustrate particulate and sulfur control in an Integrated Gasification Combined-Cycle (IGCC) setting. To determine the appropriate NO, control, SPPCo performed a Best Available Control Technology (BACT) as part of its PSD application, which is currently under review by NDEP and EPA Region 9. A summary of this analysis has been added to the Final EIS (section 4.3.2.1). The analysis evaluated five technologies: water or steam injection; advanced water or steam injection; dry low-NO<sub>x</sub> combustion; selective non-catalytic reduction (SNCR); and selective catalytic reduction (SCR). This analysis showed that the advanced water or steam injection would not work with low-Btu coal gas; dry low-NO<sub>x</sub> combustors are not available for low-Btu coal gas combustion; SNCR would be ineffective for the lower temperature exhaust gases that would be exiting the combustion turbine; and several problems exist with the use of SCR, including its inability to work effectively during startup and shutdown; problems associated with using sulfur-bearing fuels; ammonia use; and disposal of the spent catalyst, which typically contains heavy metal oxides. However, it was assumed that SCR could still be a feasible option, in spite of these concerns, and environmental, economic, and energy impacts were evaluated. It was

found that while the use of SCR would reduce  $NO_x$  emissions (0.05  $\mu g/m^3$ ) below levels associated with steam injection technology (0.55  $\mu g/m^3$ ), the environmental benefits would be minimal. However,  $NO_x$  emissions from steam injection would be below PSD significance level (1  $\mu g/m^3$ ) and SPPCo. and DOE are hopeful that the proposed project would be capable of achieving substantially lower than predicted  $NO_x$  levels by varying gasifier in-bed sorbent composition and characteristics, adjusting rates of steam injection into gas turbine combustors, and implementing other modifications. Because the expected annualized cost of using SCR would be approximately \$5,349/ton, and the potential adverse environmental consequences associated with the use of SCR, it was considered less acceptable than steam injection.

29-с The next concern is water use. Now as most of us know, this plant is in an arid area and we're under drought conditions. So any water use by this plant should be We should consider whether there are alternative configurations of this plant that will reduce NO<sub>x</sub> emissions and also that could possibly reduce water use by this particular facility. Now, this graph compares the water use of the proposed plant to two other power plants, both in Wyoming, which use, have an alternative configuration of air cooling which leads to reduced water use. As you can see, these two facilities will use only about a third or a fourth as much water as the Piston Plant in relation to the amount of power generated. Now the Piñon Plant will use about...six to 700 cubic feet per minute of water. That Neil Simpson plant, which is about the same size, is only going to use about 120 cubic feet per minute of water. So I'd like to see the Final EIS evaluate the possibility of alternative configurations of this project to reduce water use. And also, as I stated earlier, I'm concerned about these NO, emissions. I'd like to see alternative configurations of this project that could reduce the emissions of that particular air contaminate.

AIR/DRY COOLING WATER CONSUMPTION

**RESPONSE:** A response to comments on water use was provided previously. Please see Response to Comment 18-a. A response to comments on  $NO_x$  emissions was provided for the previous comment (please see Response to Comment 29-b).

The cooling options analysis performed by SPPCo. has been added to the Final EIS (section 4.3.2.2). This analysis compared air condensers (dry cooling), a hybrid system (50 percent wet cooling/50 percent dry cooling), and a cooling tower (wet cooling). It was found that the use of air condensers (dry cooling) would consume approximately 941 acre-feet or 92 percent less water per year, which would represent an increase of approximately 0.16 percent in annual average volume for the Truckee River at Tracy Station. However, any decrease in water consumption for cooling may not result in increased river flow downstream of Tracy Station if SPPCo. exercised the option of utilizing the water for another purpose. If the water remained in the river for use by more junior water rights hylders, it would represent an increase of approximately 1.3 cfs or 0.15 percent in river flow. The study also determined that in addition to an increased cost of \$7.8 million, there were some negative environmental impacts associated with the use of air condensers, such as increased air emissions. Based on the results of this study, SPPCo. proposed the cooling tower as the preferred cooling system for the proposed Piñon Pine Power Project.

# 30: Sandra Theisen, Spokesperson Against Government 5-Acre Tracts Southwest Reno, Public Hearing-Reno, 6/23/94

30-a ...I know you're saying this is a new technology with coal, but that's also the excuse they used when they made the Susanville Power Plant. And now it's just a building that's taking up space. I would like to see, if the DOE is going to provide money, instead go to geothermal because we do have it right here and it is available. Even though it costs more, it would be more beneficial because it's renewable.

ALTERNATIVE TECHNOLOGIES

RESPONSE: The Draft and Final EIS address the reasonable alternatives to the proposed action. As discussed in section 2.2, the purpose of and need for the proposed Federal action define the bounds of its reasonable alternatives. Congress established the CCT Program with a specific purpose — to demonstrate the commercial viability of technologies that use coal in more environmentally benign ways than conventional coal plants. Some energy legislation, such as the National Energy Policy Act of 1992, address broad policy issues and questions concerning energy choices. In contrast, the CCT legislation has a narrow focus in directing DOE to demonstrate clean coal technologies. Other technologies that cannot serve to carry out the goal of the CCT Program legislation (e.g., natural gas, wind power, conservation) are not germane to DOE's decision of whether or not to provide cost-shared funding support for the proposed project, and therefore, are not reasonable alternatives for this EIS.

30-b And another thing I would like the DOE to consider is we do have inversions in the winter that the emissions would, it would greatly affect our health here in Reno because the power plant is not going to go away if it's put there. It's going to create more pollution which we already have.

EMISSIONS HEALTH EFFECTS INVERSIONS

**RESPONSE:** A response to comments on local air quality was provided previously. Please see Response to Comment 4-d.

As stated in section 4.1.2 of the Draft EIS, the proposed Piñon Pine Power Project would be in compliance with all applicable Federal and state regulations (see section 9.2 of the Draft and the Final EIS). EPA's Prevention of Significant Deterioration (PSD) program is intended to protect public health and welfare; to ensure economic growth while preserving existing clean air resources; and to preserve and protect natural scenic, historic, and recreational resources. One criterion of the PSD program is determination of an area's status regarding attainment of ambient air quality standards (AAQS). Ambient air quality standards are adopted by EPA and state agencies to protect public health and welfare, including environmental resources (e.g., crops, livestock, wildlife). The air toxic analysis showed that hazardous air contaminant emissions from the proposed plant would be below Nevada AAQS; therefore, no adverse health effects would be expected.

30-c I would prefer that you do sponsor the geothermal. I don't like hiding it in Tracy because, if it is such a good technology, why not put it here in Reno? People in Tracy moved out there for the rural environment and feel that if it is such a good -- ... These people in Tracy moved out there for the rural environment. If this is such a good technology, why not put it just here in Reno.

ALTERNATIVE SITES
ALTERNATIVE
TECHNOLOGIES
RENO

**RESPONSE:** A response to the issue of using an alternative technology was provided for a previous comment (30-a) submitted by the commenter. Responses to comments on alternative sites were provided previously. Please see Responses to Comments 3-a and 13-a.

30-d And to conclude, I would like to know why DOE doesn't use this technology in existing coal plants instead of building new ones....

RETROFIT

**RESPONSE:** DOE does provide co-funding support for repowering (replacing a major portion of an existing facility) and retrofitting (adding environmental control equipment to a coal-using facility) technologies. However, DOE is limited by the projects submitted in response to its Program Opportunity Notices (see section 1.1 of the Draft and Final EIS). Funded projects, however, must demonstrate the capability of replacing, retrofitting, or repowering existing power generating facilities so that conventional coal facilities can be upgraded with clean coal technologies.

#### 31: Steven Alastuey, Volunteer, Citizens Alert, Public Hearing-Reno, 6/23/94

31-a ...I have been aware in the past and have been concerned with the work aspects of the project. But I appreciate this type of environmentally concerned study and I encourage continued diligence to refine power production to the cleanest process possible and to make it easily affordable to the general public....

**GENERAL** 

**RESPONSE:** Comment is noted.

32: M. Lee Dazey, North Nevada Coordinator, Citizens Alert, Written Comment-Reno, 6/23/94

**32-a** I'm here to learn about proposed DOE facility.

**GENERAL** 

**RESPONSE:** Comment is noted.

33: Steven Alastuey, Volunteer, Citizens Alert, Written Comment-Reno, 6/23/94

33-a I'm a volunteer at Citizen Alert and involved in some other environmental groups (including Sierra Club). I'll take notes and report to them. I'm also a disabled carpenter with a perspective of labor employment and jobs. I try to derive sensible aspects of the above concerns. As student, this information is useful in studies.

*GENERAL* 

**RESPONSE:** Comment is noted.

- 34: Sandra Theisen, Spokesperson Against Government 5-Acre Tracts Southwest Reno, Written Comment-Reno, 6/23/94
- 34-a We would prefer further research using geothermal power which is renewable resource rather than coal which is a nonrenewable, and a very dirty and messy power source.

ALTERNATIVE TECHNOLOGIES

**RESPONSE:** A response to comments on alternative technologies was provided previously. Please see Response to Comment 30-a.

- 35: Albert L. Franco, Boilermakers Local Lodge #549, Written Comment, 6/6/94
- 35-a I am a representative of Boilermakers Local 549, which represents many highly skilled power plant construction and maintenance workers who live and work throughout Northern California and Northern Nevada. members and their families may be affected by the Piñon Pine Project. We desire to conduct a comprehensive review of documents related to this project. Boilermakers have recently engaged an environmental consultant to review the Draft EIS and related materials on this project. He will be researching the possible environmental impacts from this power plant. Boilermaker representative and/or our consultant may be making comments at the June meeting in Reno on this project, and we may also submit written remarks on the power plant. We would be most grateful if you could send us copies of the documents referenced in the attached list. We realize that many of these documents are available in public reading rooms. But our main union offices are in Pittsburg, California. The nearest reading room to our offices is in Reno, Nevada, about 150 miles away, in the County Library. It has been our experience that it is very difficult to make copies of documents in public libraries. The copy machines feed slowly and break frequently, other patrons want to use the machines, and it takes lots of exact change to run a library copier, and libraries may be reluctant to release these documents so that we could take them to a copy service. It is therefore burdensome and expensive for us to go to Reno and copy these documents. It may even

GENERAL
INFORMATION REQUEST

not be possible. Therefore, we are asking you to send us copies of these documents as listed in the attached page, with the exception of the Draft EIS, which your agency has so graciously provides us already. In addition, please send us copies of any other comments received on this project by your agency, in addition to comments voiced at the scoping meeting. (We are also requesting the transcripts of the scoping meetings in the attached list). We would also like copies of comments made to your agency in writing by anyone, including other agencies, and notes of meetings and phone calls, memorandums, and reports in any form describing the potential environmental impacts of this project, said notes and reports generated by your agency or anyone else, or submitted to your agency from any source. A fee waiver or reduction may be in order. Information in these documents will be disseminated by the Boilermakers through the EIS process and other sources, and thus will benefit the general public. Documents requested pursuant to NEPA procedures must be considered available without regard to the exclusion of interagency memoranda, and shall be provided to the public without charge, under 40 CFR 1506.0 (f). In any event, we will be willing to pay reasonable fees. Please notify me in advance if the charges will exceed \$200.00. We are willing to narrow this request to reduce any possible burdens of DOE staff time. Please contact our consultant, John Williams, at 503-626-5736 (fax 503-641-2093) with any questions in regards to narrowing this request, or matters relating to this Please send these documents as soon as request. possible, so we may peruse this data and prepare our comments for the June 23 meeting in Reno. Thank you in advance for your cooperation.

RESPONSE: The request received by DOE did not include the referenced attached list. Therefore, DOE contacted Mr. Franco of the Boilermakers to determine exactly what information was being requested. The Boilermakers were requesting all of the documents available in the reading rooms listed in Appendix H of the Draft (and the Final) EIS. These documents include the Environmental Information Volume, transcripts of scoping meetings, technical reports, the Implementation Plan, and the Biological Assessment. DOE sent these documents to Dr. John Williams. Because comments regarding the Draft

EIS had not yet been received, the union decided that receipt of these documents would fulfill its request for information.

### 36: Eugene M. Hattori, Department of Museums, Library and Arts State Historic Preservation Office, Written Comment, 6/7/94

36-a The Nevada State Historic Preservation Office (SHPO) reviewed the subject draft environmental impact statement. The document adequately considers cultural resources as per the National Environmental Policy Act of 1969. Our only comment is a recommendation to remove the Historic Properties Inventory and Archaeological Site Evaluation from public access in the reading rooms. The Archaeological Resources Protection Act of 1979 exempts archaeological site location and content information from the Freedom of Information Act due to the ongoing problem of site vandalism....

CULTURAL RESOURCES
READING ROOMS

**RESPONSE:** The Historic Properties Inventory and Archaeological Site Evaluation consists of two volumes. The second volume, which was transmitted to the commenter's office, included site information. The first volume, which does not contain site-specific information, was placed in the reading rooms.

# 37: George Jackson, Department of Conservation and Natural Resources, Division of Water Resources, Written Comment, 6/8/94

37-a We have reviewed the draft "Environmental Impact Statement" for the proposed "Piñon Pine Power Project" as you requested. There are no issues or comments that the Division of Water Resources wishes to make at this time or stage of the report....

**GENERAL** 

**RESPONSE:** Comment is noted.

#### 38: John Williams, Boilermakers Local Lodge #549, Written Comment, 6/13/94

38-a What is the BTU production rating for the proposed Piñon Pine Power Plant? I estimated it at about

BTU

1,100-1,200 million BTUs, but if you know a better number please notify me....

**RESPONSE:** For the design basis, coal input to the proposed Piñon Pine Power Project would be 73,550 lbs/hour at 11,350 Btu/lb (higher heating value). This would equate to 835,000,000 Btu/hour for an expected 95 MW net generation. This information has been added to Table 2.1.3-3 in the Final EIS.

### 39: Cynthia Herman, Department of Comprehensive Planning, Written Comment, 6/23/94

39-a Thank you for an opportunity to review the Draft Environmental Impact Statement ("DEIS") for the above referenced project. Upon careful reading of the proposed project, environmental consequences and cumulative impacts, it appears that the proposed Piñon Pine Power Project is consistent with the goals and action programs contained in the Truckee Canyon Area Plan of the Washoe County Comprehensive Plan. The Department of Comprehensive Planning has no further comment on the DEIS at this time.

**GENERAL** 

**RESPONSE:** Comment is noted.

40: Bill Hollis, FOXX Systems, Written Comment, 7/1/94

40-a Detailed analyses focusing on the "Endangered" Cui-Ui fish species and the Lahonton Cutthroat Trout.

Purportedly neither species present in the vicinity of the project. Overlooked in the early discussions of aquatic life in the Truckee River were the Brown Trout, and Catfish which are present in the whole river from the Donner Lake area to Pyramid Lake.

BROWN TROUT
CATFISH
ENDANGERED SPECIES

**RESPONSE:** The U.S. Fish and Wildlife Service made a determination that there would be no effect to any threatened or endangered species by the proposed project (see letter included in the Draft and Final EIS, Appendix B). As discussed in section 3.6.3 of the Draft and the Final EIS, a total of 11 sensitive fish and wildlife species were identified in the vicinity of the proposed project site. Of these, only two were fish species: The Cui-ui (endangered) and the Lahontan cutthroat trout (threatened). The brown trout and the catfish were included in the list of wildlife species observed at the Tracy Power Station and

surrounding region (see Table 3.6-4 of the Draft and Final EIS); however, neither species is endangered or threatened. All aquatic species were considered during the evaluation of impacts on aquatic ecosystems. Because the proposed plant would operate as a "zero" discharge facility for the Truckee River, no increases in water temperature, dissolved oxygen, or toxic chemicals would be expected. In addition, the "worst-case" withdrawals of 3 percent of Truckee water for use by the proposed project would not adversely impact these species.

40-b Type of Coal and the origination point vs High Sulfur content, disposal of the LASH (Limestone and Coal Ash Mixture) the Noise of the "Steam Blowoff", and applicability of the site construction of Rebuilding, in respect to the geological strata structure, are of serious concert [sic] to the ecological and environmental health along the River.

COAL LAŚH DISPOSAL NOISE IMPACTS SULFUR CONTENT

RESPONSE: One of several aspects in writing an environmental impact statement is to determine potential adverse effects and identify ways to mitigate these concerns. DOE and SPPCo, recognize the concern associated with the use of high sulfur coal (1-4% sulfur) and use of western low sulfur bituminous or subbituminous coal (<1%) sulfur) has been proposed. All coal shipments would be unloaded in an enclosed facility, operated under negative pressure that vents to the atmosphere through fabric filter dust collectors. Coal would be transferred both to the gasifier and to the storage silo by an enclosed conveyor system, thus minimizing the potential for sulfur dust to enter into the environment. Regarding LASH disposal, LASH has a significant potential for reuse, and at this time, various uses are being evaluated. Table 4.1.10-1 in the Draft and Final EIS examines the potential reuses of LASH. However, until a final decision on reuse is reached, the planned procedure for disposal would be to transport it to the nearby Lockwood landfill. With regard to the steam blowing activity, which would result in a temporary (1-2 week period) and short-duration (about 2 1/2 minutes) noise disruption, SPPCo. would mitigate the impact by offering to temporarily relocate the affected residents to a hotel in the Reno/Sparks area at SPPCo.'s expense. In addition, previous studies have shown that short-term exposure of noise levels of more than 100 dBA would not adversely affect animal behavior or physiology. Furthermore, due to the high potential for ground movement in the area, construction of the proposed plant would comply with the highest standards of the Uniform Building Code (Zone 4) and other applicable codes. In consideration of the possibility of soil collapse, SPPCo.'s construction crews would overexcavate, and recompact to subgrade/grade with structural backfill as required. Remediation of soils by other means would also be considered (such as use of soil binders). No problem associated with soil collapse has been experienced. Section 4.3 of the Final EIS has been expanded in its discussion of mitigation measures.

**40-c** Need Fire Department, Fire Marshall position on FIRE potential hazards, fires, explosive events. Regarding the possibility, prevention, and treatment of.

FIRE HAZARD

RESPONSE: Ms. Judy Price, Fire Marshall for the Truckee Meadows Fire Department, and Mr. Rich Riolo of the Nevada Division of Forestry were contacted during preparation of the Draft EIS. Fire protection at the proposed site would be under the jurisdiction of the Nevada Division of Forestry. According to Mr. Riolo, no increase in the current level of fire personnel or equipment would be required during either the construction or operation phase of the proposed project. The chance of an upset resulting in an explosion is small, and upset episodes are monitored by the state. Although there is some potential for fire or ignitability from coal storage or coal dust build-up in the coal crushing and handling systems, the likelihood of an incident can be minimized (or eliminated) by proper care and management. SPPCo. employees responsible for coal handling would be trained in appropriate safety procedures and precautions. Fire suppression measures would be determined in the final design of the proposed project and would be in conformance with National Fire Protection Association codes and state guidelines. If a fire should erupt, onsite fire protection and suppression systems exist at Tracy Station. The existing plant system, with the cooling pond serving as the source of fire protection water, provides 4,000 gpm of water to the fire protection water loop.

40-d Water usage/loss to the Truckee - during times of drought where water flow has been all but cut off, and there is no flow. Can the new facilities utilize the existing wells or the ponds for the water source, and will the "New" well be sufficient to the needs of the expanded facility?

WATER CONSUMPTION WELL WATER

RESPONSE: As described in section 2.1.3 of the Draft and the Final EIS, well water would be the source of water for the plant's raw water system, including the proposed Piñon Pine Power Plant. Well water would be pumped to the existing Unit 3 raw water tank and then pumped to the plant raw water system. Because the water quality in existing Well No. 1 is not sufficient for use as make-up water or for the demineralizer; and it does not meet drinking water standards, a new well will be drilled in 1994. The location of this new well has changed since publication of the Draft EIS. It is now to be situated near the maintenance shops (which is further away from the Truckee River than the original location).

Water from this new well will be used for domestic and general plant uses. Although estimates for the life of the project indicate that adequate water would be available, water from the existing cooling pond would augment surface water from the Truckee during drought or periods of low flow, if necessary. No surface water would be used to supplement groundwater.

40-e Para 2.1 Coal, Limestone, Coke storage. It would appear that not enough attention has been paid to the storage quantity. Coal - 800 Tons per day usage, and only 800 tons storage Coke - 800 Tons per day usage, same storage Lime Storage, 5 day supply, - 300 tons, with 60 ton per day usage This area has been known to have snow, sufficient to close the I-80 Freeway East and West of Tracy, a condition that has been known to tie up Freeway and Rail transportation for at least 48 hours. This induced shortage of materials could occur at a time when the power output for this area could become critical.

COAL STORAGE COKE STORAGE LIMESTONE STORAGE

**RESPONSE:** DOE and SPPCo. realize that adverse weather or other uncontrollable events (e.g., rail strike) could potentially affect the proposed project. SPPCo. modified original designs to better ensure that there would be adequate storage facilities for coal, dried coke breeze, limestone, and LASH in case of emergencies. As described in section 2.1.3 of the Draft and Final EIS, the coal would be stored in one large field-erected storage facility that would be sized to store over 16,000 tons. This structure would have the capacity to store a 20-day supply of coal. Coal usage per day would be approximately 800 tons. Therefore, there would be an adequate back-up coal supply in the coal storage facility. Dried coke breeze would be received at the plant via trucks with pneumatic trailers for initial startup and for each subsequent gasifier startup. The coke breeze would be conveyed pneumatically to an 800-ton capacity coke storage silo using the truck-trailer's own pneumatic blower. Coke breeze would be used only during startup of the gasifier. The coke storage silo would be sufficient to handle approximately eight gasifier starts. Sized limestone would be received at the plant on a daily basis via trucks with pneumatic trailers. The sized limestone would be conveyed pneumatically to a 5-day capacity (i.e., 300 tons) limestone storage silo using the truck-trailer's pneumatic blower. In addition, one of the features of the proposed project is its fuel flexibility. The plant would be capable of operating on natural gas or propane, if necessary.

**40-f** Well Water usage for Raw water - What study results have been made to determine effect on the present generators at Tracy, and on the aquifer depletion potentiality of the region?

AQUIFERS GROUNDWATER WELL WATER

**RESPONSE:** Section 3.4.3 (Groundwater-Affected Environment), section 4.1.4.3 (Groundwater-Environmental Consequences), and Appendix F (Groundwater Quality) in the Draft and Final EIS, as well as the Water Quality Technical Report, which is available in the reading rooms, discussed the existing aquifer conditions and the potential impacts from the proposed project. Two swab and two bail tests (also referred to as "slug" tests) were conducted on each of the twelve monitoring wells to test the aquifer. The U.S. Geological Survey finite-difference modular groundwater flow model, MODFLOW, was used to simulate the three-dimensional flow conditions at the proposed site. Results of the tests and modeling indicated that no change in groundwater flow would result from the proposed project. Since publication of the Draft EIS, SPPCo. has changed the projected location of the new well that will be replacing existing Well #1. This new location is situated farther from the Truckee River and would not cause impacts to groundwater or surface flow different from those of existing Well #1.

**40-g** Increased size of Septic System - Contained Closed Cycle or Drain Field effluent - Siphoning into well water - and into Truckee River Eco System.

SEPTIC SYSTEM

**RESPONSE:** It has been determined that the capacity of the septic system currently installed at the Tracy Power Station site would be sufficient to handle the additional facilities of the proposed project (section 2.1.3 of the Final EIS has been amended to reflect this). The system was constructed as a soil absorption system and meets the appropriate distance requirements for streams or watercourses and water supply wells.

**40-h** Stormwater Run-off, however low in the past decade, what possibility of heavy stormwater overfilling the "Lined Evaporation Pond"?

EVAPORATION POND STORMWATER RUNOFF

**RESPONSE:** Stormwater runoff is directed to the cooling pond and the chances of overflow are slight. A more comprehensive discussion on stormwater runoff was provided previously. Please see Response to Comment 5-e.

40-i Section 3.4, Pg 3-18 Water Resources

WATER SUPPLY

The present level of the Truckee is hardly more than a trickle was much the same as last year. At present there are many pools where fish are flopping around in sub standard sized pools.

RESPONSE: There are instances during extremely low flow when inadequate water levels to support fish are present in the upper Truckee River. Under these circumstances, water temperature rises, dissolved oxygen levels decrease, and fish die. This circumstance has not and is not expected to occur in the section of the river immediately downstream of the diversion for the proposed Piñon Pine Power Project. The lowest flow recorded at the Tracy gauge (located immediately downstream of the Tracy site diversion) occurred in October 1992 (monthly mean flow of 50.5). This is not a trickle nor does it present the above-mentioned fatal conditions to fish present in this reach of the Truckee River. The maximum effect expected as a result of water withdrawals for the Piñon Pine Power Project would amount to 1.4 cfs, less than a 3 percent decrease. This decrease in flow is not expected to impact the fish in this portion of the Truckee River.

The analysis performed to determine anticipated impacts of the proposed project on federally listed fish species such as the Lahontan Cutthroat Trout and the Cui-ui Sucker was under the most conservative set of circumstances. Those circumstances included the period of lowest flow recorded, and its impact, if any, on the most sensitive of fish species present. The Pyramid Lake Paiute Tribe had a concern that the operation of Piñon Pine would dry up the Truckee River as a result of Sierra extracting its water rights at Tracy. According to historical records, this has never occurred. The configuration of the intake from the Truckee River would prevent drying up of the river as a result of Tracy extractions unless dredging were to occur. In this instance, an Army Corps of Engineers (ACOE) 404 Permit would be required. It has been SPPCo.'s experience that under these circumstances, the ACOE would require a minimum instream flow (of 2-3 cfs) which would prevent drying up of the river, and other significant impacts to aquatic life, wetlands, and the riparian vegetation located along the river course. In addition, there are many springs and seeps which contribute to the flow of the river, downstream of the Tracy plant site. In most instances this additional flow is adequate to allow the Pyramid Lake Paiute Tribe to meet its more senior water right. If the Tribe were not to meet its water rights, SPPCo. would be required, by law, to reduce its extractions from the river, along with other less senior water rights holders.

**40-j** Table 3.4.2a and 3.4-2b are very informatic as to the analysis of the water samples, but can't help but wonder about the absence of figures for nitrates  $NO_3$ .

NITRATES WATER QUALITY RESPONSE: The Truckee River (at two locations), the evaporation pond, the cooling pond, and Tracy Station wells have been historically monitored for nitrate (as NO<sub>3</sub> and N), nitrite, and total nitrogen concentrations. The following table presents results from the sampling of nitrate (as NO<sub>3</sub> and N) conducted in the Truckee River, Tracy Station wells, the cooling pond, and the evaporation pond compared to maximum concentration levels and World Health Organization standards. Further information regarding nitrite and nitrogen concentrations can be found on pages D-6 through D-9 of Appendix D (Analytical Data) in the Water Quality Technical Report, which is available in the reading rooms. These data established the parameters for which further testing was performed (see Tables 3.4-2a and b of the Draft and the Final EIS). Because nitrate, nitrite, and nitrogen concentrations were substantially below standards, and no existing process at Tracy Power Station contributes to nitrate levels, further testing was not performed.

Summary of Nitrate Analysis of Tracy Station Water Sources
Previously Conducted by SPPCo.

Site	Date	Standard (mg/L)	Nitrate (as NO <sub>3</sub> )	Nitrate (as N)
Well #2A	3/27/63	45	0.5	
	3/29/63	45	<del></del>	0.5
Well #1	8/13/91	10		<0.1
	10/9/91	10		
	7/30/92	45	<4	<0.1
Well #3	8/13/91	10		0.85
	10/9/91	10	-	1.2
	7/30/92			
Evaporation pond	11/19/79	45		
	11/19/79	10	0.49	
	7/30/92	45	<44	
Cooling Pond	7/30/92	45	<4	
Truckee River at Tracy	1/2/91	45	3.7	
	2/6/91	45	0.5	
	3/6/91	45	1.2	
	4/3/91	45	0.2	

Site	Date	Standard	Nitrate	Nitrate
		(mg/L)	(as NO <sub>3</sub> )	(as N)
Truckee River at Tracy	5/1/91	45	0.1	
(continued)	6/5/91	45	0.1	
	7/3/91	45	0	
	8/7/91	45	0	
,	9/4/91	45	0	
	10/2/91	45	0	,
	1/2/91	10		0.83
	2/6/91	10		0.12
	3/6/91	10		0.27
	4/3/91	10		0.03
	5/1/91	10		0.03
	6/5/91	10		0.01
	7/3/91	10		0.01
	8/7/91	10		0.01
	8/7/91	10		0.01
	9/4/91	10		0
	10/2/91	10		0
	11/6/91	10		0
	12/4/91	10		0

**40-k** Second Paragraph of Section 3.4, pg. 3-19 needs to be reviewed again vs the real life water levels.

WATER SUPPLY

RESPONSE: The Final EIS (section 3.4) includes the averaged extreme annual flows at Tracy Station gauge (1,950,000 acre-feet per year in 1983 as the high and 109,800 acre-feet per year in 1992 as the low). In addition, Table 4.1.4-2 has been updated to include actual monthly flow rates for 1993 (previous rates were approximations provided to DOE during preparation of the Draft EIS). It should be noted that the values changed very little, and analysis results remained the same.

**40-1** Table 4.1.2-3, pg 4-10, the  $NO_x$  levels seem a bit high.

EMISSIONS
OXIDES OF NITROGEN

**RESPONSE:** Although the total tons per year (TPY) of NO<sub>x</sub> may seem high (575 TPY) in response to the significant emission rate (40 TPY). It should be noted that this simply means that a PSD review is required. Analyses demonstrated that the NO<sub>2</sub> levels were in compliance with ambient air quality standards and PSD increments. EPA separates dispersion modeling analysis into two distinct phases: (1) the preliminary analysis, and (2) a full impact analysis. The results of the preliminary analysis are used to determine the significant impact area of each pollutant, and determine which criteria pollutants require a full impact analysis. The EPA does not require a full impact analysis for a particular pollutant if the results of the preliminary analysis indicate the emissions from the proposed source or modification would not increase ambient concentrations by more than the prescribed significance levels. A full impact analysis is required for any pollutant for which estimated ambient pollutant concentrations attributable to the proposed source or modification are greater than the significance levels. The preliminary impact analysis for NO<sub>2</sub> was performed using the ozone (O<sub>3</sub>) limiting method which required the inclusion of existing Tracy sources in the analysis. Results indicated the maximum incremental increase in annual  $NO_2$  concentration ( $\mu g/m^3$ ) of 0.86 was less than the significant level of 1  $\mu g/m^3$ . Therefore, a full impact analysis was not necessary to demonstrate compliance with applicable ambient air quality standards and PSD requirements.

40-m Para 4.1.2.3 Acid Disposition, pg. 4-23 What significance will the Acid Mist/Rain attain during high flow rate from the stacks of the Sulfator, Hot Gas, Combustion Turbines, the heat Recovery Steam Generator or from the Coal and Lime storage handling. Sulfuric Acid Mist ∴ Acid Rain

ACID MIST ACID RAIN

**RESPONSE:** A response to comments on acid rain was provided previously. Please see Response to Comment 8-d.

As described in section 4.1.2, Table 4.1.2-3 of the Draft and Final EIS, 6.4 tons per year of sulfuric acid mist would be produced by the proposed project. Due to the high deposition velocity of acid mist aerosols (i.e., the mist would fall to the ground relatively quickly because of its weight), most would be deposited in the near vicinity of the source. The impact on immediate structures or ground surfaces would be of no consequence.

However, a portion of the mist could be transported into the atmosphere. If that were to occur, the high solubility of the sulfuric acid aerosol would cause it to be rapidly scavenged, either by serving as nuclei for cloud droplet formation, adsorption into existing cloud droplets, or by impaction by falling hydrometers. Such a process is referred to as "precipitation scavenging" in which pollutants are removed from the atmosphere and deposited on the ground. In that case, that portion of the sulfuric acid mist could play a role in the formation of "acid rain." Because only a small portion of the annual emission of 6.4 tons per year of sulfuric acid mist would be involved compared to the 225 tons per year of SO<sub>2</sub> emitted, such a role would be small.

**40-n** As touched upon in the report (DEIS) in Section 4, the nitrates  $SO_2$ ,  $NO_x$  and combined chemicals do require constant monitoring attention.

NITRATES MONITORING

RESPONSE: All units subject to acid rain regulations contained within the 1990 Clean Air Act are required to install continuous emission monitoring systems, called CEMS, to continuously monitor emissions of SO<sub>2</sub>, NO<sub>x</sub>, and CO<sub>2</sub>. In addition, the New Source Performance Standards contained in 40 CFR Part 60 also require continuous monitoring of specific pollutant emissions. The proposed Piñon Pine Power Project would be subject to both of these regulations. To comply with these emissions, emission points would be equipped with the applicable CEMs to collect data on pollutant emissions. As required in the regulations, this information would be submitted to both NDEP and EPA on a regular basis.

40-o The prevailing winds predicted for the Tracy Area according to the Reno Airport "Wind Rose" are not only misleading but extremely inaccurate in the bargain. This was proved by patterns exhibited from the study at the Hi-Shear - Aerojet Plant in Storey County, up Largomarsino Canyon in the hills above and West of Mustang, East of the Airport, and South of the Truckee River. Also of wind patterns taken at the Landfill, also up Largomarsino Canyon, and at the Nevada HydroCarbon Plant formerly east of the Mustang Brothels at the Mustang area. The Canyon along 1-80 and the many connecting and converging canyons along the I-80 corridor create their own weather microsystems, and produce their own wind patterns from the Largomarsino Area to the Smoke House at the Eastern most tip of Storey County.

WIND PATTERNS

RESPONSE: Onsite meteorological data was used for all modeling analyses performed for the project with the exception of the Class I visibility impact analysis. In this case, the Class I area in question was the Desolation Wilderness Area which is approximately 81 kilometers (50 miles) southwest of Tracy (see section 4.1.2.2 of the Draft and Final EIS). The onsite meteorological data was considered very representative of conditions within the Truckee River canyon but was not considered representative of conditions once the plume had moved beyond the influence of canyon terrain. Therefore, to more accurately assess the impact of the plume on the distant Class I area, meteorological data from the National Weather Service site at Reno airport was used.

40-p I suggest that one of the "Air Quality Monitoring systems be stationed at Tracy, Patrick, Mustang, and at the Eagle Picher Plant. The stations should monitor temperature, humidity, dewpoint, wind direction and speed. There is an Air Quality Monitoring Van at the Old Mustang (Washoe County) Landfill entrance, but a remote visual inspection indicates that there may not be wind information available.

AIR QUALITY MONITORS

**RESPONSE:** A response to comments on air quality monitors was provided previously. Please see Response to Comment 8-a.

40-q Section 4.1.3.1 Geology and Seismic Activity Earthquake or earthquake structure in a predominantly earthquake prone area - Faults Structure. Truckee-Verdi-Reno-Olinghouse Fault Zone Fig 3.3-2 Pg 3-14, 3-15 discussion of fault Hypotheses as to possible impacts. The coverage of past Seismic activity in the study area was a thoughtful treatise, but living on the Truckee-Verdi-Reno-Olinghouse Fault Zone as we do at the largomarsino Canyon Area at Rainbow Bend, the concern regarding earthquakes remains in high profile in the concerns of many residents of the area.

**EARTHQUAKES** 

**RESPONSE:** A response to comments regarding seismic hazards was provided previously. Please see Response to Comment 6-c.

**40-r** Section 4.1.4.1 Water Use and Availability Truckee River Levels on June 29th, an A.M. reading:

WATER SUPPLY

Vista Bridge	111 CFm
Tracy Bridge	75 CFm
Derby Dam	40 CFm
Lahontan Canal	64 CFm

**RESPONSE:** Comment is noted.

40-s Section 4.1.11 Noise Because of the potentially hazardous distractions caused by Stack "Flares" and the "Steam Blowdowns", and the rise in ambient light due to the increase of the facilities at Tracy, High Visibility Signage needs to be placed on both sides of the East and West bound lanes of I-80 sufficiently enough removed from the site as to properly alert drivers on the freeway. Notification to Motorists on Nearby I-80 - Permanent signs by DOT, similar to those placed in High Winds or Low Flying Aircraft, or Dust Areas. Also a permanent statement on the signs that at the closest distance, no ear damage can or will result, ie: no claims. It probably would be a good idea, also, if a notice were put in the aviators bulletins such as the NOTAMS and or JEPP, to alert pilots of the presence of the "Flares" in the area to prevent panic from the small aircraft population.

FLARE NOISE IMPACTS

RESPONSE: Section 4.1.1 of the Draft and Final EIS explains why a determination was made that flare opacity emissions from the proposed project would not cause a significant impact (because the flame would be of low brilliance) and why, therefore, no mitigation measures would be needed. The required FAA permit would address all necessary requirements. The proposed mitigation measure (i.e., advance notification and temporary relocation of potentially affected individuals) for the noise from steam-blowing (section 4.1.11 of the Draft and Final EIS) has been sufficient in the past and is the only measure used by similar plants; it is expected to be adequate for the proposed project. However, SPPCo. would continue consultations with the Storey County Building Department and the Nevada Department of Transportation and would take whatever actions they believe are required.

#### 41: John Williams, Boilermakers Local Lodge #549, Written Comment, No Date

41-a I am a researcher for Boilermakers Local Union #549. Here are comments on the Piñon Pine proposed power plant. At a June, 1994 hearing on this project, I **GENERAL** 

presented slides on other coal plants that have less  $NO_x$  emissions, and less water usage than the Piñon Pine facility.

**RESPONSE:** Comment is noted.

41-b Here is data on the agencies that issued permits to these plants, so these issues can be pursued. For information about the air cooled coal-fired power plants, the Neil Simpson #1 and #2 are owned by Black Hills Power & Light, and the Wyodak plant is owned by Pacific Power, all in Wyoming; those plants are permitted by Wyoming Department of Environmental Quality. Bernie Dailey is the air quality contact, he may know who to talk to about water use: 307-777-7391. The June, 1994 issue of Power Magazine also features an article on air cooled power plants. Other coal fired, air cooled power plants include the Matimba unit in South Africa, the Rosebud plant in Colstrip, Montana. Additional air cooled units in the United States cited in this article, for which I do not know the fuel, are the Doswell plant in Virginia, Maalaea Unit 15 in Hawaii, and the Sayreville Cogen in New Jersey. The air cooled OLS plant is natural gas fired, in Camarillo, California.

AIR/DRY COOLING

**RESPONSE:** DOE appreciates the information provided. A response to comments on use of air cooling was provided previously. Please see Response to Comment 29-c.

41-c Regarding  $NO_x$  emissions, the following table lists possible air agency contacts for the possible cleaner coal plants I referred to in my public hearing appearance.

**OXIDES OF NITROGEN** 

**RESPONSE:** A response to comments on NO<sub>x</sub> controls was provided previously. Please see Response to Comment 29-b.

Also, I see a nitrogen plant on the plant site map in the DEIS, but I do not see any description of the nitrogen plant in the DEIS text. Please explain.

NITROGEN PLANT

RESPONSE: A nitrogen plant would be constructed, if needed, to produce the nitrogen for regeneration of the sulfur-absorbing sorbent, maintaining a constant flow of purge gas through selected equipment and instruments, cleaning of the hot gas filter (when normal gas is unavailable), pneumatically conveying coal dust, and performing system purging at shutdown. SPPCo. would not construct this plant if dependable shipments of two truckloads of nitrogen a day could be arranged. However, if constructed, the nitrogen plant would be a cryogenic air separation plant where the constituents of air would be separated by cryogenic distillation to deliver high purity nitrogen in the required quantity. It would include compressors, storage tanks, a liquid nitrogen pump, and vaporizers sized to provide for startup, normal operation, and a safe shutdown of the facility. The nitrogen plant, if constructed, would not be a source of air emissions and would not increase water consumption. It would operate approximately 6 hours per day, 7 days each week, and would produce about 90 dB at 3 meters (15 feet), which would be comparable to other proposed equipment in terms of noise level. This information has been added to section 2.1.3 of the Final EIS.

## 42: Barry W. Welch, U.S. Department of the Interior, Bureau of Indian Affairs, Written Comment, 7/22/94

42-a P. 3-21, par. 3 --Satisfaction of the exercise of Orr
Ditch water rights is only one of five requirements of the
Truckee River Operating Agreement.

TROA
WATER RIGHTS

**RESPONSE:** The Final EIS (section 3.4.1) now includes a summary of provisions listed in section 205(a)(2) of the Truckee-Carson-Pyramid Lake Water Rights Settlement Act, P.L. 101-618, (i.e., meeting dam safety and flood control requirements; enhancing spawning flows; meeting terms of the Preliminary Settlement Agreement; and minimizing costs associated with the Stampede Reservoir).

42-b p. 3-21, par. 4-The water-using interests identified include some Carson River as well as Truckee River water rights; Lahontan Valley wetland water rights acquired pursuant to Section 206 of P.L. 101-618 are Newlands Project rights; and there are more than four major interests (including the Pyramid Lake Paiute Tribe) that possess water rights in the Carson-Truckee basin.

CARSON RIVER LAHONTAN VALLEY WATER RIGHTS

**RESPONSE:** The Final EIS (section 3.4.1) now clarifies that the four major water users depend on the limited resources of both the Truckee and the Carson basins. No reference was found that refuted the

1992 National Research Council (NRC, 1992) statement that there are four "major" water-using interests (p. 93 in "The Truckee Carson Basins in Nevada" case study). The use listed by NRC as "the Pyramid Lake endangered fish species use" includes Pyramid Lake Paiute Indian Tribe interests in the Truckee River for this purpose. The Final EIS also describes additional provisions of the Water Rights Settlement Act (P.L. 101-618). In 1989, the Pyramid Lake Paiute Tribe and SPPCo. signed a Preliminary Settlement Agreement to allow certain water stored in Stampede Reservoir to be used by SPPCo. in drought years and by the Tribe for fish purposes in normal and wet years. When conditions of P.L. 101-618 are fulfilled, this agreement will take effect and the Truckee River will be operated in accordance with a new agreement, the Truckee River Operating Agreement (TROA). P.L. 101-618 also requires compliance with the Newlands Project Operating Criteria and Procedures (OCAP), which were developed to serve project rights holders through more efficient project operation. Another provision of P.L. 101-618 is the sustenance of primary wetland habitat within Lahontan Valley; the U.S. Fish and Wildlife Service has begun the Environmental Impact Statement process to examine the effects of converting agricultural water from the Newlands Project for this purpose. The current schedule calls for the final operating agreement and associated environmental analyses to be completed by the end of 1995.

Of additional interest may be the discussion of what could happen if SPPCo. saved 1.3 cfs by implementing an alternative cooling options that was presented in the Response to Comment 29-c.

42-c p. 3-22, par. 3--The Truckee River hydrology is misleading: Are the Pyramid Lake inflows historical averages or computer model results? Also, the phrase "to sustain Pyramid Lake" should be explained.

HYDROLOGY PYRAMID LAKE TRUCKEE RIVER

**RESPONSE:** The Final EIS (section 3.4.1) now provides a citation for the historical inflow averages and indicates that annual inflows to Pyramid Lake average 420,000 acre-feet per year and that it is estimated that 430,000 acre-feet per year are required to maintain the lake's level. The Final EIS also notes that when inflow is not exceeded by the evaporation rate, the lake is considered stable.

42-d p. 3-23, par. 1--The goal of the Cui-ui Recovery Plan is to increase the probability of persistence of the species to the point that it is no longer endangered or threatened and can be removed from the Federal endangered species list. Provision of flows to attract potential spawners, for spawning, egg incubation and development, and migration of spawners and larvae to

CUI-UI RECOVERY PLAN

Pyramid Lake are some of the objectives of the Recovery Plan.

**RESPONSE:** The Final EIS (section 3.4.1) now reflects that attraction flows is one objective of the Cui-ui Recovery Plan and not the goal.

42-e p. 3-64, par. 1--The <u>interagency</u> Cui-ui Recovery Team identified developed the Cui-ui Recovery Plan that was approved in 1992, but had no connection with the 1978 plan. Also, in the team affiliation enumeration "Bureau of Reclamation" should be replaced by "Bureau of Indian Affairs".

CUI-UI RECOVERY PLAN

RESPONSE: The Final EIS (section 3.6.3) now reads, "The Cui-ui Recovery Plan was originally approved by the USFWS in 1978. The second revision of the recovery plan was prepared by an interdisciplinary team of representatives from the U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, Nevada Division of Environmental Protection, Nevada Division of Wildlife, Arizona State University, United of Nevada-Reno, and Pyramid Lake Fisheries (May 15, 1992) and currently is in force." The acknowledgment page of our copy of the second revision of the Cui-ui Recovery Plan states that Tom Strekal of the U.S. Bureau of Reclamation served as the Team Leader; there was no mention of the Bureau of Indian Affairs. DOE recognizes that Mr. Strekal is now employed with the Bureau of Indian Affairs; however, the interdisciplinary team list identified agencies and not individuals.

42-f p. 4-36, par. 2--The text is confusing. Diversions to the Truckee Canal are regulated by Newlands Project Operating Criteria and Procedures; "excess flow" could reach Pyramid Lake when the canal is diverting at less than capacity.

TRUCKEE CANAL WATER DIVERSION

**RESPONSE:** The phrase "excess flow" was changed to "unappropriated flows" in the Final EIS (see section 4.1.4.1). In addition, this section was rewritten for clarification.

42-g General (but related primarily to pp. 4-50 and 6-1)-The DEIS does not adequately address the impacts of a reduced river flow to water quality and indigenous aquatic resources. The analysis and conclusions for endangered species are not sufficient in this regard because cui-ui spawning flows are only required in

AQUATIC SPECIES
CUI-UI
RIPARIAN VEGETATION
TRUCKEE RIVER
WATER QUALITY
WATER SUPPLY

January-June (sometimes as late as July) and not every Furthermore, water is stored in Stampede Reservoir and Prosser Creek Reservoir to supplement lower Truckee River flows to promote cui-ui spawning primarily and Lahontan cutthroat trout migration There is currently no water right for secondarily. Truckee River instream flows and, therefore, no protection for instream water quality or aquatic resources, particularly downstream from Derby Dam (which includes the Pyramid Lake Indian Reservation). during July-December of any year. Additionally, one of the objectives identified to assist in recovery of cui-ui is rehabilitation of the lower Truckee River riparian area; a portion of the water stored for cui-ui and Lahontan cutthroat trout and currently used for spawning purposes may be required during summer and fall to establish and maintain riparian vegetation. Further reduction of instream flows as proposed in the DEIS could exacerbate conditions for aquatic and riparian life which are already inimical in many years.

**RESPONSE:** Responses to comments on water availability were provided previously. Please see Responses to Comments 5-c, 18-a, 40-k.

Historically, drought conditions tend to affect water rights after Cui-ui spawning is complete. Generally, Cui-ui spawning occurs at a time of year when water rights on the Truckee River are being met. Water is stored in upstream reservoirs for the Cui-ui and released at the appropriate time of year to act as an attraction for spawning. SPPCo.'s water rights come from a different source (Privately Owned Stored Water) and are counted separate from the Cui-ui water. Under the lowest reported flow conditions, the impact of water withdrawal for the proposed project would amount to, at most, 3 percent of the total flow. In its review of the Biological Assessment, the U.S. Fish and Wildlife Service arrived at a "no impact" decision in regards to the Cui-ui (see Appendix B of the Draft and the Final EIS).

Water quality from the Reno-Sparks area to below Derby Dam could only be substantially affected if there were significant diversions from the river and/or significant point sources discharging to the river. It has been demonstrated, though, that the percentage of the Truckee River flow involved, under the worst of historic conditions, still results in an insignificant effect, involving a very small percentage of the river's flow. Under low flow conditions, a majority of the Truckee River flow below the Reno-

Sparks area is treated effluent from the Reno/Sparks Joint Sewerage Treatment Facility (also called "return flow").

Water quality in the lower Truckee River between Tracy Station (the proposed site for the Piñon Pine Power Project's diversion) and Derby Dam would be virtually unaffected when compared to that immediately upstream from Tracy Station for the following reasons:

- There are no point source discharges to the Truckee River known to occur between Tracy Station and Derby Dam;
- No known diversion points from the river occur between Tracy Station and Derby Dam;
- The Tracy Station diversion for the proposed Piñon Pine Power Project is not a significant percentage of the total flow (at most, 3 percent), even under severe drought conditions; and
- Tracy Station does not discharge into the river.

Thus, impacts to aquatic life (as a result of the proposed Piñon Pine Power Project) on the lower Truckee River due to either increasing concentrations of pollutants or significantly decreasing flow volume would be unlikely.

42-h The Western Nevada Agency should be added to DOE's BUREAU OF INDIAN AFFAIRS contact and mailing lists.

**RESPONSE:** The Western Nevada Agency and the D.C. office of the Bureau of Indian Affairs have been specifically added to the list of contacts and the mailing list.

- 43: Dean Haymore, Storey County Building Official and Planning Administrator, Written Comment, 7/22/94
- 43-a With a coal gasification power plant, and the expanding of cooling ponds, there is a potential of fog hazards in that little basin and moisture build up on Interstate 80.

RESPONSE: SPPCo. recently (July 1994) analyzed the potential impacts of the proposed Piñon Pine Power Project on fog generation within the Truckee River Canyon and particularly quantified the impacts from water vapor emissions associated with the project on fog episodes along Interstate 80 (see Appendix D1, which has been added to the Final EIS). This analysis was performed using two computer models, the Seasonal and Annual Cooling Tower Impacts (SACTI) model and the Industrial Source Complex (ISCST2) model, developed and approved by the U.S. EPA and the Electric Power Research Institute (EPRI). No fogging or icing were predicted by the SACTI model on Interstate 80 as a result of the operation of the Tracy and proposed Piñon Pine cooling towers using both 1992 and 1993 meteorological data. A maximum of only 1 hour per year of fogging was predicted to occur at two receptors located 200 and 300 meters to the west-southwest of the Tracy #3 tower for 1992 meteorology. transportation routes would be affected by any of these fogging impacts. No icing impacts were predicted for the Tracy #3 tower for either year of meteorology. For 1992 and 1993 combined, the proposed Piñon Pine sources (cooling tower, mechanical evaporator, and aerator) were predicted by ISCST2 to increase the number of source fogging cases by 48 hours. At most, this is a 3 percent increase in the number of source fogging hours predicted above baseline. The conservative nature of the ISCST2 model should be considered when assessing the significance of the modeling results. An indication of the level of conservatism inherent in the ISCST2 results can be determined by comparing the ISCST2-predicted cooling tower impacts with the SACTI results. The ISCST2-predicted impacts of the existing plus proposed cooling towers indicate that alone, these sources would cause approximately 13 hours of fogging in 1992 and 23 hours in 1993. This is contrary to the SACTI results, which indicated no additional fogging from these sources. Compared to the ISCST2 treatment, the SACTI model incorporates more sophisticated entrainment and thermodynamic formulations for the rise, transport, and evaporation of the vapor plumes. Therefore, the SACTI model results are more representative of actual conditions. Although the SACTI model is not designed to determine fogging impacts from sources other than cooling towers, this comparison does provide some indication of the level of conservatism in the ISCST2 model results. The results of the ISCST2 modeling were also quite conservative with respect to the experience of eyewitnesses that drive by the Tracy Power Plant nearly every day. The total number of predicted fogging hours (835 in 1992 and 824 in 1993) far surpasses the typical experience of 10 fogging days reported by eyewitnesses. Considering the conservatism of the ISCST2 predictions and the relatively minor impact from the proposed Piñon Pine sources that this model predicts, it can be concluded that the modeling analysis demonstrates that there would be no substantial increase in fogging due to increased water vapor emissions associated with the new sources at the facility.

43-b No studies or concern so far on the closure of the power plant, mitigation problems and cost analysis for preclosure or closure within forty or fifty years. All utilities need to calculate the necessary funds for remediation of closure.

DECOMMISSIONING REMEDIATION COSTS

**RESPONSE:** A response to comments pertaining to closure or decommissioning was provided previously. Please see Response to Comment 22-b.

43-c All other concerns of the environmental impact studies have been satisfactorily addressed, except those that were stated in the public hearings.

**GENERAL** 

**RESPONSE:** Comment is noted.

## 44: David Farrel, U.S. Environmental Protection Agency, Office of Federal Activities, Written Comment, 7/22/94

Concerns--Insufficient Information (see enclosed "Summary of Rating Definitions and Follow-Up Actions"). Our rating is based on our concerns regarding the project's potential impacts to air quality and the need for additional information regarding best available control technology, especially for particulates. We also have concerns regarding potential impacts to water quantity/quality and biological resources and recommend additional information in the Final Environmental Impact Statement (FEIS) regarding these issues.

AIR QUALITY
BACT
BIOLOGICAL RESOURCES
EIS RATING
WATER QUALITY
WATER SUPPLY

**RESPONSE:** The BACT analysis was included in the Air Quality Technical Report, which was made available to the public in the reading rooms. Information contained in this document has been incorporated in an expanded section (section 4.3) on mitigation measures in the Final EIS. Other issues of concern mentioned in this comment are addressed specifically in responses to subsequent comments submitted by the commenter.

44-b We support the Department of Energy (DOE) in its efforts to develop clean coal technology. If successful, clean coal technology could be used commercially at coal-fired power plants throughout the United States and can go a long way in reducing environmental impacts. particularly those to air quality. If the Piñon Pine project proves successful, the IGCC technology would be continued at the Tracy Power Station in excess of twenty years following the demonstration period. Although we support the demonstration, in this particular application impacts to air quality and water quantity would be worse under the proposed alternative than under the no action alternative, which would involve expansion of the Tracy Power Station as a natural gas and fuel oil power plant. It is unclear from the DEIS whether other power generators whose future capacity upgrades would involve coal were considered for this demonstration. It appears that those geographical areas where coal is already being used would benefit more immediately from this The DEIS provided an explanation of the project. screening criteria used to select the Tracy Power Station from among Sierra Pacific's facilities. The FEIS should include a discussion of the screening process used to select Sierra Pacific from among other power companies which may have existing or proposed coal-fired facilities.

ALTERNATIVE SITES
DOE SELECTION PROCESS
NO-ACTION ALTERNATIVE

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a. In accordance with 10 CFR 1021.216(h), DOE filed the announcement, "Selection of Proposals for the Demonstration of Clean Coal Technologies" with the EPA, which included a discussion of the criteria used by DOE for proposal selection.

The Program Opportunity Notice (PON) for Round IV of the Clean Coal Technology, issued by DOE, included the seven qualification criteria that perspective applicants were required to meet to be considered for the preliminary evaluation phase. These qualification criteria were:

- (1) The proposed demonstration project or facility must be located in the United States.
- (2) The proposed demonstration project must be designed for and operated with coal(s) from mines located in the United States.

- (3) The applicant must agree to provide a cost-share of at least 50 percent of the total allowable project cost.
- (4) The applicant must have access to, and use of, the proposed site and any proposed alternative site(s) for the duration of the project.
- (5) The proposed project team must be identified and firmly committed to fulfilling its proposed role in the project.
- (6) The applicant must agree that, if selected, it will submit a repayment plan.
- (7) The proposal must be signed by a responsible official of the proposing organization who is authorized to contractually bind the organization to the performance of the Cooperative Agreement in its entirety.

During the Preliminary Evaluation Phase, proposals were evaluated to determine that they were:

- Consistent with the stated objective of the PON; and
- Contained sufficient management, technical, cost, finance, and other information to permit a Comprehensive Evaluation to be performed.

Technical evaluation criteria for the Comprehensive Evaluation were divided into two major categories (Demonstration Project Factors to assess the technical feasibility and likelihood of success of the project and Commercialization Factors to assess the potential of the proposed technology to reduce emissions from existing facilities, as well as to meet future energy needs through the environmentally acceptable use of coal, and the cost effectiveness of the proposed technology in comparison to existing technologies). Weights were assigned to each criterion and are presented below:

• DEMONSTRATION PROJECT FACTORS (50%)

Technical readiness (20%)

Adequacy, appropriateness, and relevance of demonstration (15%)

#### Piñon Pine Power Projec

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needs (1

- Projects that collectively utilize a broad range of U.S. coals and are in locations which
  represent a diversity of environmental, health and safety, and socioeconomic (EHSS),
  regulatory, and climatic conditions;
- Projects that achieve a balance between reducing emissions and providing for future energy needs by the environmentally acceptable use of coal or coal-based fuels; and
- Projects that provide strategic and energy security benefits for remote, import-dependent sites, or that provide multiple fuel resource options for regions which are considerable dependent on one fuel from for total energy requirements.

Finally, DOE gave preference (as a tie-breaker) to projects located in states with rulemaking bodies that would treat clean coal technologies as pollution control projects.

44-c The projected emissions of particulate matter smaller than 10 microns (PM<sub>10</sub>) appear high for the size of the proposed project and would consume up to 65 percent of the Prevention of Significant Deterioration increment for the area. The specific sources of PM10 are listed in Table 4.1.2-2 in the DEIS; however specific projected emissions from each of those sources are not provided. It is also unclear whether best available control technologies are proposed for each source, particularly in the coal handling and processing facilities. The FEIS should provide the uncontrolled and controlled emission rates for each pollutant at each source, including grain loadings at each vent after controls, and describe the best available control technology proposed for each source.

BACT EMISSIONS PARTICULATES PSD INCREMENT

**RESPONSE:** The Final EIS clarifies that consumption of the PSD increment for particulates represents consumption by all  $PM_{10}$  sources and not just those from the proposed Piñon Pine Power Project. In addition, Table 4.1.2.2 of the Final EIS includes predicted emission rates from potential sources. To summarize, a complete list of the particulate sources associated with the project and the estimated emission rate for each source is provided below.

	77
Source	Emission rate (lb/hr)
CT/HRSG stack	20.0
Sulfation Combustor	3.8
Flare	0.06
Startup Heaters	0.10
Coal Dryer	0.80
Feed Lockhopper Vent	0.135
Feed Surge Bin Vent	0.005
Limestone Feed Hopper Vent	0.005
Cooling Tower	0.11
Wastewater Cooling Tower	0.50
Railcar Unloading	2.14
Raw Coal Storage Dome	1.37
Coal Preparation	1.71
Coal Day Silo	0.34
Coke Storage Silo	0.34
Lime Storage Silo	0.34
Solid Waste Storage Silo	0.34
Gasifier Feed Vent	0.86
Sulfator Depressurization Vent	0.10
Sorbent Storage Vent	0.0003

A summary of the BACT analysis has been added as section 4.3.2.1 of the Final EIS. The CT/HRSG would be equipped with a high temperature mechanical filtration system which would remove particulates from the gas stream prior to firing in the combustion turbine. This system would provide a control efficiency of 99 percent. The sulfation combustor would be equipped with a fabric filter for particulate removal with a control efficiency of approximately 99 percent. All coal handling and processing facilities including the railcar unloading facilities, material storage, and conveying systems would be enclosed with fabric filtration systems providing approximately 99 percent control efficiency at exhaust points. Particulate control on the minor combustion sources such as the flare and startup heaters would be provided through the use of clean burning fuels such as natural gas or propane. Both the process cooling tower and the wastewater cooling tower would be high-efficiency units equipped with drift eliminators which limit drift losses to less than 0.0005 percent. The determination regarding whether or not these controls meet BACT requirements is currently under consideration by NDEP Bureau of Air Quality staff.

Section 176(c) of the Clean Air Act (CAA) requires that 44-d Federal agencies must demonstrate that projects which they fund, approve, permit or authorize do not cause new violations of Federal air quality standards, aggravate existing violations of air quality standard, or delay timely attainment. More specifically, under CAA Section 176(c), Federal agencies are prohibited from engaging in or supporting in any way actions or activities that do not conform to an applicable State Implementation Plan. The FEIS should discuss the project's consistency with the CAA's conformity Should the Department of Energy requirements. determine that a conformity determination is necessary, we recommend that the draft conformity determination be circulated for public and inter-agency review prior to or simultaneous with issuance of the FEIS. If you have questions regarding conformity, you may wish to contact Mr. Bob Pallarino, EPA Region 9, Air and Toxics Division, at (415) 744-1212.

CAA REQUIREMENTS
SIP CONFORMITY

**RESPONSE:** Section 9.2 of the Draft and Final EIS (Atmospheric Conditions Requirements) describes the statutory and regulatory requirements for Federal action conformity to State Implementation Plans. Because the Tracy Segment (Subbasin 83) of the Truckee River Basin is designated as an "unclassified" area, it is considered the same as areas classified as attainment areas. Therefore, the provisions of the conformity rule do not apply and no action relating to a conformity determination for the proposed Piñon Pine Power Project site is required, and none was undertaken. A statement to this effect has been added to the air quality section (section 4.1.2.1) of the Final EIS.

44-e The FEIS should describe the double liner that would be used in the evaporation pond to prevent seepage of wastewater contaminants to groundwater and the Truckee River.

DOUBLE LINER EVAPORATION POND

**RESPONSE:** To meet state regulations, the pond would have a double liner system consisting of a HDPE (high density polyethylene) or similar material over a layer of very low permeability clay or geosynthetic clay fabric. Leak detection would be accomplished by observation (monitoring) wells adjacent to the pond. This liner scheme is similar to the current proposal for the Fort Churchill evaporation pond, which has been accepted by the NDEP. This information has been added to section 2.1.3 of the Final EIS.

44-f According to the DEIS (p. 4-39), the existing cooling pond can accommodate 43 acre-feet of runoff without overflowing. The DEIS should indicate the expected frequency of flood events which would produce 43 acre-feet of runoff in the collection area.

COOLING POND STORMWATER RUNOFF

**RESPONSE:** A response to comments on stormwater runoff overflow was provided previously. Please see Response to Comment 5-e.

44-g The DEIS mentions but does not specify the operational difficulties which would occur should the switchyard be located outside of the 100-year floodplain. Because of the switchyard's potential impacts to flood storage, flood flow conveyance, and Truckee River water quality from sediment/contaminant releases, we recommend that you reconsider placing the switchyard outside of the 100-year floodplain.

FLOODPLAIN SWITCHYARD

RESPONSE: Since 1962, the area north of the Truckee River has been graded with fill removed from the floodplains; the area south of the river has been raised with fill and gravel. Consequently, the floodplain boundary probably has moved to the north and off the site. It is expected that potential impacts from the proposed switchyard would be minimal because of its limited size [6.9 square meters (75 square feet)] and open structure. Although not yet verified by FEMA, DOE does not believe the proposed switchyard would be built in an 100-year floodplain.

44-h We understand that the proposed project's water needs would be accommodated by existing water rights. However, EPA has extensive concerns regarding water supply and associated water quality issues in the Truckee River basin. We commend Sierra Pacific for incorporating several water conservation measures into the plant design and urge the company to pursue the conversion of the existing plant-bearing cooling water system to a closed cooling system to reduce groundwater consumption, as well as all other feasible measures to further reduce water consumption at the proposed plant. It is unclear whether the cooling system conversion proposal has been factored into the 1,004 acre-feet projected water use estimate. The FEIS should clarify this. The FEIS should also discuss all other potential opportunities for water conservation and, consistent with

CLOSED COOLING SYSTEM
POLLUTION PREVENTION
WATER CONSERVATION

the Council on Environmental Quality's pollution prevention guidance, commit to those that are feasible.

**RESPONSE:** The Final EIS (section 4.1.4.1) clarifies that the water-conserving measures mentioned are incorporated in the proposed facility's design and were considered in the projected 1,004 acre-feet water use estimate. In addition, the mitigation measures section (section 4.3) of the Final EIS expands on the discussion in the Draft EIS and provides information on additional water-conserving measures considered and includes the analysis of cooling options performed by SPPCo.

44-i According to the DEIS (p. 4-39), the proposed evaporation pond could be toxic to aquatic life because of potentially low pH values and high concentrations of salts and dissolved metals. The DEIS also states that wildlife enclosures would be constructed around the pond to minimize wildlife exposure to the pond: The FEIS should discuss the specific mitigation measures that would be implemented to ensure protection of biological resources, including birds and other terrestrial wildlife. For example, we recommend that small mesh netting or other effective avian exclusion measures be seriously considered for use at the pond.

BIOLOGICAL RESOURCES EVAPORATION POND MITIGATION

**RESPONSE:** At this time, SPPCo. does not plan to install mesh netting over the evaporation pond. Monofilament lines placed in a 25-foot spaced grid have been successful in deterring use of open water by birds that have a circling landing pattern (e.g., gulls and geese). However, these lines are not intended for use as an exclusionary device for all wildlife. The evaporation pond is not anticipated to be hazardous to wildlife. Periodic testing would be conducted and compared with EPA and NDOW standards. If found toxic, SPPCo. would either neutralize the pond's contents or work with NDOW to develop the necessary exclusion measures, as stated in section 4.1.6.1 of the Draft and Final EIS.

Water quality in the evaporation ponds would be periodically monitored by Sierra Pacific (DEIS, p. 4-51). The FEIS should provide further details regarding the monitoring program, including: (1) frequency of monitoring; (2) parameters to be monitored; (3) monitoring methods and protocols; (4) action levels; and (5) contingency measures when action levels are exceeded.

EVAPORATION POND MONITORING

RESPONSE: The monitoring program for the evaporation pond would comply with Nevada's groundwater discharge program as specified in the state's Water Pollution Control Act. Nevada does not have any groundwater standards. However, the unwritten policy is that the state will not allow degradation of groundwater quality below drinking water standards or its present state. Groundwater monitoring for nutrients, BOD, and specified contaminants would take place at observation wells up and down gradient (as appropriate) on a monthly or quarterly basis. In addition, periodic testing would be conducted and compared with EPA and NDOW standards. SPPCo.'s groundwater monitoring program for the proposed project would be developed in conjunction with the Nevada Division of Environmental Protection.

44-k We recommend that, after construction activities are completed, all remaining disturbed areas at the project site be revegetated with native species to minimize the impact of the additional habitat loss that this proposal would involve. Revegetation efforts should include maintenance measures to discourage establishment of non-native species.

REVEGETATION

RESPONSE: Vegetative plantings are planned for two areas adjacent to the active plant site. Additional trees of appropriate riparian species would be planted along the south bank of the Truckee River. This would provide more habitat for perching birds such as Bald Eagles and Black-crowned Night Herons, increase shading of the Truckee River to keep water temperatures down for aquatic wildlife, and provide some screening of the lower portions of the project site from views along Interstate 80. Plantings of Bitterbrush (*Purshia tridentate*) are also planned for the area immediately west of the cooling ponds, in an attempt to provide an attraction for Mule Deer (*Odocoileus hemionus*) towards the Truckee River (see section 4.3 of the Draft and Final EIS). Bitterbrush, a shrub and a preferred food of Mule Deer, grows rapidly in disturbed areas, especially areas that have previously been destroyed by fire. It should be noted, however, that historically, native vegetation on the proposed site and the surrounding area has been displaced by invasive species. Consequently, there are no endemic species for the area. In addition, a majority of the areas that would be disturbed are planned for structures, which would preclude the need for revegetation. Areas within the active project site cannot be vegetated because of the potential fire hazard it would pose.

44-1 We commend Sierra Pacific Power Company on its initiatives to minimize waste and substitute non-hazardous materials for hazardous materials where

LASH REUSE POLLUTION PREVENTION possible. We agree with DOE that LASH (spent limestone and coal ash) should be reused if environmentally safe and if markets are available. The evaluation of LASH uses and environmental impacts should be included in the FEIS, along with any proposals for disposal or reuse marketing that would be pursued based on the evaluation.

RESPONSE: DOE recognizes that for each LASH reuse option, the material must be fully tested and characterized to assure that it meets the physical and chemical property requirements associated with that particular alternative. The projected chemical composition of the LASH is presented in section 4.1.9 of the Draft and Final EIS. Of the 24 LASH reuse alternatives listed in section 4.1.10, 4 have been developed, 2 are being developed, and the remaining 18 are potential options that would require extensive investigation and a successful demonstration before any of them could be implemented. An outside consultant has been hired by SPPCo. to further evaluate the potential for reusing LASH as well as possible disposal options. Appendix G of the Draft EIS summarized the analyses that are planned; this analysis has been moved to section 4.3.2 in the Final EIS.

## 45: Melissa Smith, Summary of Verbal Conversion

45-a I am concerned about "fluffing off." Particulates and contamination over the area of impact would be deposited. Plants would die (of natural causes) and then with a heavy torrential rain, plants with the contamination would wash into the Truckee River. Has this been considered?

EMISSIONS VEGETATION WATER QUALITY

**RESPONSE:** EPA and the State of Nevada have established primary and secondary air quality standards. Primary standards establish ambient concentration levels above which public health is believed to be threatened. Secondary standards set concentration levels above which the environment (e.g., crops, livestock, wildlife) is considered to be negatively affected. For particulates, concentration levels for both the primary and secondary standards are the same. Consequently, no impact is anticipated to human health and minimal impact to biota as a result of particulate emissions from the proposed Piñon Pine Power Project (see section 4.1.2.1 of the Draft and Final EIS).

45-b If you have all of these pollutants in the air, over time, they will change the ecology of the area. The plants

EMISSIONS VEGETATION

would change and this would be an ecosystem change. Has this been considered.

RESPONSE: The air quality analysis performed on soil and vegetation (see section 4.1.2.1 of the Draft and Final EIS) indicated that no adverse impacts to soil or sensitive plants would result from the proposed project. The airborne pollutants with the highest likelihood of causing damage to plants over the long-term are  $SO_2$  and  $NO_x$ . These are the major pollutants that would be found in gaseous emissions from the proposed project. The extent of their impacts on vegetation would be directly related to a variety of factors, including wind speed, direction, and frequency; air temperature; humidity; geomorphology of the area; and the location of the proposed project in relation to sensitive plant communities. The maximum concentration of these pollutants is not expected to extend beyond 2,700 meters (2,951 yards) from the source. Only two sensitive species were found during site surveys of the area; both were invasive weedy species. By extrapolating annual average concentrations for  $SO_2$  and  $NO_x$ , long-term effects can be predicted. The annual average ambient concentrations for  $SO_2$ , including both background concentrations and the proposed project, would be  $52 \mu g/m^3$ . When compared to the U.S. Fish and Wildlife Service's threshold for chronic plant injury of  $130 \mu g/m^3$ , the proposed project would not contribute to adverse  $SO_2$  impacts on plants. The discussion in section 4.1.2.1 of the Final EIS expands on that provided in the Draft EIS and identifies the potential impacts to identified sensitive species.

Annual concentrations for  $NO_2$  from the proposed project were modeled to be 0.90  $\mu$ g/m³, which is below EPA's established significance levels. Because  $NO_2$  emissions were below significance levels, no ambient concentrations were modeled. However, short-term 1-hour emissions, which represent the highest predicted concentrations were modeled to be a maximum of 6.0  $\mu$ g/m³. The U.S. EPA has established a threshold for 5 percent foliar damage of 7,500  $\mu$ g/m³ for the 1-hour maximum concentration. The proposed project emissions are a very small percentage of that threshold. The predicted  $SO_2$  and  $NO_2$  concentration values predicted support the conclusion that no adverse effects on plants over the long-term would occur.

## 46: Clare W. Mahannah, Water Research and Development, Inc., Written Comment, No Date (Received after 7/23/94)

46-a On behalf of the Truckee Carson Irrigation District, we have reviewed the water related portions of the Draft Environmental Impact Statement (DEIS), the Biological Assessment and other documents related to the proposed Piñon Pine Power Project (Project). Additionally, the

WATER RIGHTS

State Engineer files related to the water rights associated with the Tracy Power Plant, the site of the expanded Project, have been reviewed. See enclosed memo of 9/16/92 from Sierra Pacific Power Company (Sierra) reporting annual water usage and a tabular summary of the water rights associated with the Tracey Power Plant. The rights of Sierra for "Industrial" purposes (evaporation. steam releases etc.) of which approximately 3500 acre feet are surface rights from the Truckee River and 600 acre feet are underground water from wells located near the River. The priorities of the surface water rights range from as early as 1865 to as late as 1897. The following water supply concerns are presented in respect to the impact that the Project may have upon downstream water users as well as the reliability of operation of the Project at design capacity during drought periods of time.

**RESPONSE:** Comment is noted.

46-h WATER SUPPLY MAY BE MARGINAL, ASSUMING ALL PRIORITIES ARE SERVED: According to Project planners, the water demand of the Project is estimated to increase by 1,005 acre feet/yr over the current use. (See page 1, last paragraph of the Biological Assessment.) In 1991, as per the Memo of 9/16/92 prepared by Sierra, the total use, assuming this proposed Project becomes operational, would increase to 3,796 acre feet (2491 acre feet + 1,005 acre feet). demand of approximately 3,500 acre feet, approaches the total surface rights of 3,500 acre feet that is held by Although in the text of the Biological Assessment, the projected increase in water use of 1.005 acre is considered a "worst case" condition, the design of this Project may be marginally low, especially in view of the fact that the design and ultimate operation of this type of power plant may be prototype and/or experimental as adapted to this climate and environment. i.e. The actual water use may exceed the projected use.

WATER CONSUMPTION WATER RIGHTS

**RESPONSE:** The estimates of water consumption provided by SPPCo. were on the conservative side and overestimated usage because of their tenuous nature (being estimates and not measured volumes) and

the fact that detailed project design is still ongoing. Most of the estimates for water consumption are related to the conventional power plant design and those figures are appropriate. DOE estimates that water consumption by the proposed project would not exceed SPPCo.'s existing water rights. A discussion of the proposed project's water rights is provided in sections 3.4.1 and 3.8.3 of the Draft and the Final EIS.

46-c WATER RIGHTS ARE MARGINAL DURING DROUGHT WHEN JUNIOR PRIORITIES CANNOT BE SERVED: e.g. If Certificates #6229 with a priority of 1890 for 130 acre feet and Certificate #8768 with a priority of 1897 for 948 acre feet, totalling 1,078 acre feet cannot be served, the net water right (surface & underground) would [sic] 4,100 - 1078 = 3,022 acre feet. drought supply, assuming that 1890 and junior priorities cannot be served, is less than the demand of about 3,500 acre feet per year. In view of the eighth year in drought that Western Nevada is experiencing, other junior priorities [sic] Sierra's may also not be served if the drought continues. If indeed the water supply for the proposed Project become limited, would the power production of the plant be reduced or would there be a tendency for over appropriation of the River and/or the underground (wells) diversion in order to maintain the Project's energy generation capacity? What is the operational schedule of the power plant if the water supply becomes limiting?

DROUGHT WATER RIGHTS

**RESPONSE:** A response to comments on water rights issues was provided previously. Please see Response to Comments 5-c.

Should there be an insufficient amount of water for SPPCo. to meet its rights at Tracy, the company may be forced to reduce generation at the Tracy site. This decrease in generation would be determined by generation unit efficiency. The operation of the Tracy Unit #1 would be reduced first because it is the least efficient unit at the site; it also happens to be the unit of highest water consumption. The proposed Piñon Pine Power Plant would be the most efficient unit, and would be the last to be curtailed. However, the return flow from wastewater treatment facilities currently are providing a full supply of water to users downstream of Vista. It is unlikely that these junior priorities of 1890 and 1897 could not be served.

WATER RIGHTS OF DOWNSTREAM WATER USERS 46-d MAY BE ADVERSELY IMPACTED DUE UNDERGROUND PUMPAGE OF SIERRA'S PROJECT WELLS: Upon consideration that the underground water #1 and #2 wells (Permits 28054 & 58990) are located very near (110' & 90', respectively) to the River channel and are completed in the alluvium, the probability of these wells taking water from the River is good. See Figure 4.1.1 Map of Tracey Facility from the DEIS. Based upon studies (WRD, 1991) conducted in the Truckee Meadows of Sierra's wells located near the River channel where it was demonstrated that the wells were primarily supplied by the River, it appears likely that these wells at Tracey may also be supplied by the River. According to the DEIS, Well #1, the current production well, will be abandoned, Well #2 will be used as an observation well and proposed Well #3, located within a 1/4 mile from the present channel of the River will be drilled and used as the primary production well for the Project. The DEIS should address the impact that these current wells and the proposed well (Well #3) will have upon the River. If these wells do take water from the River, downstream users, including agricultural users and the fishery will be adversely impacted by the expansion of the power plant due to the increased water demand on the River.

DOWNSTREAM USES
TRUCKEE RIVER
WATER RIGHTS
WELL WATER

**RESPONSE:** A response to comments on groundwater issues was provided previously. Please see Response to Comment 40-f.

One of the analyses performed determined that the impact of increased groundwater withdrawal on adjacent well owners would be limited to a radius of 457 meters (1,500 feet). Conservative modeling indicated that increased pumping would not have a significant impact on the Truckee River flow. Since publication of the Draft EIS, SPPCo. has relocated the new well further from the river. No adverse impacts to surface water flow is expected from full usage of SPPCo.'s groundwater water rights. However, it is acknowledged that under extreme low flow conditions, withdrawal of full water rights at Tracy could affect more junior water rights holders.

46-e PROJECT WATER DEMAND COMPUTATIONS ?: Although the DEIS shows the volume of the evaporation ponds, no area data of either the cooling ponds on the

COOLING POND EVAPORATION GRAVEL PITS south side of the River or the gravel pits, located on the north side of the River is shown in order to estimate evaporation amounts from these open water surfaces. What water rights are associated with the evaporation from the gravel pits? Are these evaporation "rights" a part of Sierra's industrial decreed water rights assigned to the Power Plant? If so, the water supply for the Project may be further reduced in order to offset the evaporative waste from the gravel pits. Does Sierra or the Water Master measure the rate and total diversion into the Power Plant or is this estimated? Are totalizing meters in place to monitor water usage at the River make up station?

METERS WATER DIVERSION WATER RIGHTS

**RESPONSE:** As part of the fog analysis presented in section 4.1.2.2 of the Draft EIS, the area of the cooling pond (1,460,944 square feet) and the abandoned gravel pit (16,400 square feet) were provided. These two areas constitute 22.2 percent of the total surface water area between Patrick, NV, and Clark Station, NV. All of the water rights associated with the proposed project are consumptive. The gravel pit would not be part of the proposed project. Until recently, peak water consumption for existing Tracy Power Station units has been estimated using rated capacity and constant values for water consumption per megawatt. However, additional flow measuring devices have been installed and are now used to augment the plant's database on water usage.

46-f SUMMARY: The above concerns have not been adequately addressed in the DEIS for this Project. Until these considerations are further evaluated and/or explained, it appears that the expanded water demand of this Project has the potential to adversely impact water rights of downstream water users, including the Truckee Carson Irrigation District and the fishery of the Lower Truckee River.

DOWNSTREAM USES WATER CONSUMPTION WATER RIGHTS

**RESPONSE:** DOE believes that it has adequately addressed the potential impacts from the withdrawal of an additional 1.4 cfs of water for the proposed project. It has carefully considered all comments received and has incorporated revisions into the Final EIS accordingly. Specific responses to water rights issues can be found for Comments 5-c, 15-a, 18-a, 18-b, 40-i, and 42-b.

**46-g** Thank you for your efforts in considering these water

**GENERAL** 

supply and demand questions in evaluating the impact of this power plant expansion.

**RESPONSE:** Comment is noted.

## 47: Larry Beck, Far West Capital, Inc., Written Comment, 7/26/94 (Received after 7/23/94)

- 47-a
  1. Did the EIS address the environmental damage resulting from the mining of coal in adjoining states, the transportation of many tons of coal weekly to the plant, i.e. what environmental damage is created by the train's emissions to haul the coal?
  - 2. Did the EIS address a possible accident whereby the train might dump coal into the Truckee River and endanger the Qui fish or the Pyramid Lake cut throat trout, both of which are on the endangered species list?

COAL MINING
COAL SPILLS
COAL TRANSPORTATION
ENDANGERED SPECIES
TRAIN EMISSIONS
TRUCKEE RIVER

RESPONSE: The Draft and Final EIS discuss the impacts from train emissions (section 4.1.2.1) and the possibility of a train accident impacting the Truckee River (section 4.1.5.3). Additional information was included to the Final EIS (section 4.1.5.3; see also Response to Comment 1-b.) The Draft EIS, however, did not discuss the impact from coal mining. The Programmatic EIS for the Clean Coal Technology Program discussed the safety and health impacts associated with each stage of coal-burning, including mining; it showed that these impacts were the same for conventional coal plants and clean coal technologies. In addition, the Programmatic EIS analyzed impacts associated with limestone mining and determined that any change resulting from the Clean Coal Technology Program would not be significant. It is estimated that more than a 300-year coal supply is available domestically.

## 48: M. Lee Dazey, North Nevada Coordinator, Citizens Alert, Written Comment, 7/26/94 (Received after 7/23/94)

48-a As a general overview, Citizen Alert would like to raise the point that while the Integrated Gasification Combined Cycle demonstrates a cleaner coal technology, it runs counter to the national goal for meeting global warming objectives. If natural gas-fired power plants can generate the same electricity with fewer emissions (as stated on p. vii), why build the coal-fired plants?

GLOBAL WARMING IGCC OPERATIONS

**RESPONSE:** The Programmatic EIS for the Clean Coal Technology Program addressed this issue. DOE recognizes that the concentration of carbon dioxide (CO<sub>2</sub>) in the atmosphere and the mass of CO<sub>2</sub> emissions from fossil-fuel burning have increased since (at least) 1958, and probably before. Between 1960 and 1986, CO<sub>2</sub> emissions increased 9.5 percent, which has been attributed mostly to the combustion of fossil fuels and global deforestation. In 1986, the United States was responsible for 22 percent of the global CO<sub>2</sub> emissions from fossil fuel burning. Of this, electric power generation contributes 35 percent, transportation 30 percent, and industrial sources 24 percent; the remaining 11 percent of CO<sub>2</sub> is contributed by the residential and commercial sectors. It is estimated that approximately 36 percent of the CO<sub>2</sub> emitted in the United States is attributable to the combustion of coal, and thus, coal use accounts for only 8 percent of global CO<sub>2</sub> emissions. It would require a major change in global economic conditions or fossil-fuel usage patterns to significantly alter the trend. Various studies indicate that there is no single measure that will solve the greenhouse (global warming) problem and that CO2 is a global problem that will require global solutions. Because of the many links between greenhouse gas emissions and other human activities and because of the magnitude of the commitment that would be required to significantly reduce global CO<sub>2</sub> emissions, it is important to consider climate issues in the context of other societal and environmental objectives. Actions that have only small effects on the rate of consumption of coal in the United States will, in turn, have little effect on global CO<sub>2</sub> emissions. Whether or not a U.S. Clean Coal Technology Program and its resulting demonstration projects, like the proposed Piñon Pine Power Project, is implemented is expected to have little effect on global CO<sub>2</sub> emissions. However, clean coal technologies could positively influence the emissions of greenhouse gases. With respect to CO<sub>2</sub>, some of the clean coal technologies improve the efficiency of the conversion of coal to useful energy. Technologies such as pressurized fluidized bed, integrated gasifier combined-cycle (like the proposed project), and fuel cells will consume less coal per unit of useful energy produced and thus also lower the amount of CO<sub>2</sub> emitted per unit of useful energy produced by coal. Adoption of clean coal technologies can actually impact CO<sub>2</sub> emissions in two fundamental ways. First, many of the clean coal technologies would result in changes in the efficiency of conversion of coal into useful energy; that is, changes in the amount of coal needed to provide the same energy, which would, therefore, change the total CO<sub>2</sub> emissions. Most importantly, the repowering technologies could increase efficiency significantly, thus lowering the amount of CO<sub>2</sub> emitted. On the other hand, many clean coal technologies involve lime or limestone as desulfurization technology and essentially rely on a chemical exchange of CO2 for SO2 in the discharge gas for sulfur control and thus, potentially increase CO2 emissions on a per unit of energy produced basis.

48-b AIR Washoe County doesn't meet federal ozone standards and is designated as nonattainment area for CO, PM<sub>10</sub>, and NO<sub>2</sub>. We are concerned with how increased levels of NO<sub>2</sub>, a contributor to the destruction of ozone, will affect our request for redesignation back to attainment levels.

EMISSIONS NITROGEN DIOXIDE NONATTAINMENT AREAS OZONE

RESPONSE: The proposed Piñon Pine Power Project would be constructed in Storey County and not in the adjacent Washoe County. Storey County is classified as an attainment area. Although parts of Washoe County are classified as nonattainment for CO, PM<sub>10</sub>, and ozone (O<sub>3</sub>), the entire county is classified as attainment for NO<sub>2</sub>. The net increase in NO<sub>2</sub> impacts attributed to the proposed Piñon Pine Power Project was determined as the difference between the future (post-project) and baseline (pre-project) impacts. An analysis of impacts to nonattainment areas is presented in section 4.1.2.1 of the Draft and Final EIS. The net NO<sub>2</sub> impact was found to be less than the significance level. Compliance with the NAAQS and PSD increments assumes that the source would not cause or contribute to air pollution. Therefore, additional analyses of project impacts on the ozone nonattainment area were not required and the proposed project would not affect Washoe County's application for redesignation as an ozone attainment area.

48-c How has the DEIS addressed growth in the Truckee Meadows and the resultant pollution from increased auto emissions and its affect on the significance levels of CO from the Piñon Pine Power Project? It's possible in the near future that even Clean Coal Technology will be too dirty.

AREA GROWTH CARBON MONOXIDE VEHICLE EMISSIONS

**RESPONSE:** The Socioeconomics section (section 3.8) of the Affected Environment Chapter of the Draft and Final EIS shows that populations in Lyon County and Storey County are expected to increase 1.9 percent between 1990 and 2010 and Washoe County's population is expected to increase 2 percent. Population growth at these rates was not considered significant. In addition, the Cumulative Impacts Chapter (Chapter 6) discussed projects that are underway or planned for the near future; none of these projects would be expected to contribute significantly to air pollution.

Why are CO<sub>2</sub> emissions not included in this analysis?
Why are DOE and SPPCo. pursuing this phase of the CCT Program when technologies for removing CO<sub>2</sub> from coal are not part of the technology?

CARBON DIOXIDE EMISSIONS

RESPONSE: Carbon dioxide (CO<sub>2</sub>) is a colorless, odorless incombustible gas that is believed to play a role in warming the Earth's atmosphere by accumulating as a "greenhouse" gas. Although the impact of this accumulation and any greenhouse heating effects on global climate change are still uncertain, it is recognized that human activities are impacting the world's climate. Consequently, there are numerous efforts being undertaken, which are supported by DOE, to control emissions of greenhouse gases (such as CO<sub>2</sub>). CO<sub>2</sub> is discussed in the Draft and the Final EIS in section 4.1.2.4 (Global Climate Change). Carbon dioxide is a product of combustion and currently there is no realistic way of reducing or eliminating CO<sub>2</sub> formation during combustion. However, strategies to reduce anthropogenic emissions of CO<sub>2</sub> include energy-efficient technologies (such as those currently being developed in DOE's Clean Coal Technology Program), energy conservation, and substitution of non-combustion energy sources.

48-e We request that you consider Selective Catalytic Reduction, SCR, which could reduce emission levels up to ninety percent.

SELECTIVE CATALYTIC REDUCTION

**RESPONSE:** A response to comments relating to the use of SCR was provided previously. Please see Response to Comment 29-b.

48-f SOIL AND VEGETATION It is stated that "NO<sub>x</sub> emissions from the facility when considered in the absence of other air pollutants would not adversely affect vegetation." Because the pollutants do not exist in isolation, we can only assume the effects upon the soil to be greater.

EMISSIONS
OXIDES OF NITROGEN
SOILS
VEGETATION

**RESPONSE:** A response to comments on impacts to soil and vegetation was provided previously. Please see Response to Comment 45-b.

In addition, the Final EIS (section 4.1.2.1) includes the following statements: " $NO_x$ , however, has been shown to increase the level of visible injury and photosynthesis reduction in plants exposed to  $SO_2$ . Since emission levels from the proposed project are significantly lower than concentrations of both  $NO_x$  and  $SO_2$  that would damage vegetation, no adverse impacts are expected."

48-g The amounts of sulfur and oxides of nitrogen that are not coming out of the stack, will remain in the coal ash waste....The DEIS states that: "Options for disposal of LASH are being investigated". It is likely that the

LASH DISPOSAL

high-volume ash waste will be more toxic than most coal-fired power plants' ash waste (because less toxic wastes are coming out of the stack). Until all disposal options are fully understood, this project should not move forward.

RESPONSE: It is not expected that LASH from the proposed project would be more toxic than ash waste from other coal-fired plants. As explained in section 4.1.10 of the Draft and Final EIS, the current proposal is to dispose of LASH as a solid waste in a local landfill unless testing shows that the waste exhibits toxicity characteristics, in which case it would be disposed of in a hazardous waste facility. This disposal procedure is considered safe. However, studies are underway to see if improved options are possible. The aspects being evaluated include ways to improve permeability, methods to reduce lime reactivity, and means to improve compacting density to reduce landfill volume. (See Appendix G of the Draft EIS or section 4.3.2 of the Final EIS.)

48-h Although SPPCo. has adequate water rights to operate a water-cooled system for Piñon Project, what kind of protection to the Pyramid Lake Paiute Tribe and the endangered cui-ui in the event of an extended drought, will the Piñon Project ensure? We suggest that the project consider the more expensive air-cooled technology.

AIR/DRY COOLING CUI-UI WATER SUPPLY

**RESPONSE:** Responses to comments on water rights and Cui-ui spawning were provided previously. Please see Response to Comments 5-c, 18-a, 40-i, and 42-g. A response to comments on air cooling also was provided previously. Please see Response to Comment 29-c.

48-i The effects of acid rain along river corridors will have an effect upon this fragile ecosystem. Has the DOE evaluated the effects on the fish and the vegetation on which they thrive?

ACID RAIN AQUATIC SPECIES

**RESPONSE:** A response to comments on acid rain was provided previously. Please see Response to Comment 8-d.

In addition, section 4.1.6.1 of the Final EIS now includes information on how the emissions from the proposed plant would not harm the aquatic ecosystem. The results of chemical analyses of surface water samples collected in the Truckee River, adjacent to the proposed site, indicate neutral or above neutral

pH and available acid neutralizing capacity (alkalinity). The pH ranged from 7.14 to 7.23 in May 1993 and 8.1 to 8.65 in September 1993. Alkalinity (which is an indicator of buffering capacity) was 41 mg/L as calcium carbonate (CaCO<sub>3</sub>) in May 1993 and 93 to 98 mg/L in September 1993.

Haines (1981) and Baker and Christensen (1991) examined the available literature for field and laboratory studies of 29 and 25 fish, respectively, which ceased reproduction, declined, or disappeared from natural populations as a result of acidification from acidic precipitation. Both studies reported that when pH is above 6.5, there were no adverse effects on any of the examined fish. Of the fish species documented in the Truckee River (in the vicinity of the proposed site), the most acid-sensitive species are the shiner, dace, sculfin, and rainbow trout, all of which begin to demonstrate impacts from acidification at pH of approximately 6.

The current pH range of 7.14 to 8.65 would be unlikely to decrease due to the operation of the proposed plant because of the high alkalinity (acid buffering and neutralizing capacity) concentrations in the river. Typically, surface waters are not vulnerable to acidification or short-term decreases in pH if the alkalinity is above 5 mg/L (Fraser, et al., 1985). Therefore, it is unlikely that any acid rain or fog produced by the proposed plant would have an impact on existing fish populations. Similarly, it is unlikely that the operation of the proposed plant would have any adverse impacts on the vegetation or other food sources for existing fish populations. The National Acid Precipitation Assessment Program (NAPAP) 1990 Integrated Assessment Report (1991) indicated no biological changes in aquatic resources above pH values of 6.5. Between pH values of 6.0 and 6.5, there may be a small decrease in species richness of phytoplankton and benthic invertebrate communities resulting from the loss of a few highly acid-sensitive species, but no measurable change in total community abundance or production would occur.

**48-j** WASTE STREAMS How are the low level wastes produced during equipment maintenance and water purification (such as metal and boiler cleaning wastes) intended to be treated and discharged?

LOW-LEVEL WASTES

**RESPONSE:** Wastes (e.g., solvents, waste oil) would be managed, transported, and disposed off-site in accordance with applicable Federal, state, and local regulations. The chemicals used for treating the boiler feedwater generally would be consumed or neutralized during the water treatment process or steam cycle. The de minimis discharge would be routed to the new, double-lined evaporation pond, where it would evaporate. If the evaporation pond fills to capacity, SPPCo. would institute dredging; all material withdrawn would be tested before disposal in the appropriate manner.

48-k ENVIRONMENTAL RISK How is environmental risk -especially regarding accidental or unmonitored leakage
and discharge of high or low-volume waste, coal pile
runoff, or other sources of leachate into surface waters
treated in the DEIS?

**HAZARDS** 

RESPONSE: The Draft and Final EIS analyzes potential problems associated with the proposed project, including those mentioned in this comment. Leak detection (area monitors) would be required, as well as hand-held leak detectors; all coal-handling systems would be enclosed (as would coke and limestone storage areas) and supplied with dust collection systems; discharges would be sent to the new, double-lined evaporation pond, which would be surrounded by monitoring wells for leak detection; and stormwater would be directed to the cooling pond. Section 4.3 of the Final EIS has expanded the discussion of mitigation measures presented in the Draft EIS.

48-1 How does the DEIS include Nevada Externalities Regulation that costs from environmental impacts and health care must be figured into the cost of new projects?

**EXTERNALITIES** 

**RESPONSE:** A response to comments on externalities was provided previously. Please see Response to Comment 19-m.

NO-ACTION ALTERNATIVE In 2,2,2 it says "under the no-action alternative, DOE would not provide cost-shared funding support for the proposed Piñon Pine Power Project, and the advanced KRW gasification technology with hot gas cleanup probably would not be demonstrated in Reno, NV, or elsewhere because there are no similar proposals in the CCT Program." Why is this true? It fails to be explained in the following sentences, "The opportunity to demonstrate this technology likely would be lost. Commercialization of the proposed technology would be delayed or not occur at all because utilities and private sector companies would be inclined to choose known and demonstrated technologies rather than new, unproven advancements." This statement presupposes that the Tracy Station Power Plant is the best place for the demonstration IGCC project.

ALTERNATIVE SITES
CCT PROJECTS
NO-ACTION ALTERNATIVE

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a. SPPCo. has stated that it would not pursue the project without the aid of Federal funding. Because no additional rounds of the CCT Program are contemplated, it is unlikely that there would be another opportunity to demonstrate this technology.

If the primary goal of the CCT Program is to 48-n demonstrate cleaner coal-burning and alleviate pollution problems from coal utilization, as stated on 1.8, then why not give more serious consideration to a demonstration project at Valmy Power Station? It has been burning coal since 1979 using unclean technology. We feel that not enough consideration was given to Valmy. A burden on the county seems a weak argument, since Humboldt County is one of the richest with tax revenues from mining the Carlin Trend. Additionally, it states that there is no gas pipeline nearby. The Paiute Pipeline gas company runs a pipeline 40 miles away from Valmy. Perhaps SPPCo. could trade gas from a newly constructed Tuscarora Pipeline with the Paiute Pipeline.

ALTERNATIVE SITES VALMY

**RESPONSE:** A response to comments on alternative sites was provided previously. Please see Response to Comment 3-a. It should be noted that the Tuscarora Pipeline has not been constructed; it is still in the permitting stage.

48-o Another impetus to burning coal at Valmy is cost of transportation of coal. Was the cost figured into the statement in 1.3.3 saying, "that an additional attribute associated with the proposed Piñon Pine Power Project would be that coal is forecasted to remain substantially cheaper than natural gas as a fuel for generation"?

COAL TRANSPORTATION

**RESPONSE:** Among the factors SPPCo. considered in its economic and reliability analysis for various sites (see section 2.2.1 of the Draft and Final EIS) included the site's proximity to gas transmission lines and the availability of line capacity and the proximity of rail tracks and existing coal handling facilities. The cost for transporting coal was determined to be approximately the same for both sites. Because of the quantity of domestic coal available, the expectation is that not only will coal remain less expensive than other fuels, but its price will not fluctuate as much.

48-p Has the Piñon Project been evaluated in terms of fulfilling baseload need with alternative projects, such as its proposed merger with Washington Power, Co.? Why is the reasonable course of action for SPPCo. the construction of essentially the same project at the same site, but without the capability of using coal fuel, when there are several projects that SPPCo. is pursuing which may eliminate the need for the Piñon baseload station plan?

BASELOAD NEED MERGER NO-ACTION ALTERNATIVE

RESPONSE: The merger of SPPCo. with Washington Water Power would not affect the need for the proposed project nor would it supply the baseload requirement in the timeframe necessary. At present, SPPCo. is limited in its import capability (and baseload support for anticipated growth) and would need to permit and construct adequate electric transmission ties to Washington Water Power in order to alleviate the problem. This solution, which is still being studied, assumes that Washington Water Power could supply the baseload shortfall when needed by SPPCo.

In order for the merger to be approved, it must meet with the approval of the Federal Energy Regulatory Commission (FERC, Docket #EC 94-23-000), five state regulatory commissions, and the stockholders of both companies. This process is expected to take approximately 18 months.

Construction of the proposed Piñon Pine Power Project must be under way prior to receipt of the merger approvals in order to meet the baseload supply shortfall anticipated.

Additional information on the ramification of the no-action alternative (SPPCo. would build the same plant without the capabilities for burning fuel) was provided previously. Please see Response to Comment 19-m.

48-q CONCLUSION The reliance upon renewables is more in keeping with our national goals. Nevada could expand upon its geothermal capacity. Has SPPCo. looked at expanding its use of geothermal beyond the 11% that it currently uses?

ALTERNATIVE TECHNOLOGIES

**RESPONSE:** Whether or not SPPCo. expands its use of geothermal capacity is beyond the scope of this Environmental Impact Statement. Congress established the Clean Coal Technology (CCT) Program with the specific purpose of demonstrating the commercial viability of technologies that would use coal in more

environmentally benign ways than conventional coal plants. Other technologies (e.g., geothermal) are not germane to DOE's decision of whether or not to provide cost-shared funding support for the proposed Piñon Pine Power Project.

48-r It is the view of Citizen Alert that the CCT program's primary goal is to promote the use of coal rather than clean up the air. As such, the project should not go forward at Tracy Station.

CCT GOAL

RESPONSE: The purpose of the CCT Program is to advance the use of clean coal technologies. As stated in the Programmatic EIS for the CCT Program, coal's abundance makes it one of the Nation's most important strategic resource in building a more secure energy future. However, almost 50 percent of the current inventory of electrical generating capacity in the United States will be more than 30 years old by 1997. There is a need for improved technologies. The objective of the CCT IV solicitation (from which the proposed project was selected) was to solicit "proposals to conduct cost-shared Clean Coal Technology projects to demonstrate innovative, energy efficient, and economically competitive technologies that are capable of being commercialized in the 1990's. These technologies must be capable of (1) retrofitting, repowering or replacing existing facilities while achieving significant reductions in the emissions of sulfur dioxide and/or the oxides of nitrogen and/or (2) providing for future energy needs in an environmentally acceptable manner." One outcome of the CCT Program would be the upgrade of conventional coal facilities with clean coal technologies and thus improved air quality.

49: Julie Butler, Nevada Department of Administration, Nevada State Clearinghouse, Written Comment, 7/21/94 (Received after 7/23/94)

49-a Attached are the comments from the Nevada Division of Environmental Protection, Historic Preservation, and Economic Development concerning the above referenced project. The Nevada Division of Water Resources responded directly to you with their comments. These remarks constitute the State Clearinghouse review of this proposal as per Executive Order 12372. Please address these comments or concerns in your final decision.

**GENERAL** 

**RESPONSE:** Comment is noted.

- 50: David R. Cowperthwaite, Department of Conservation and Natural Resources, Division of Environmental Protection, Written Comment, 6/27/94 (Received after 7/23/94)
- 50-a The Division of Environmental Protection has reviewed the aforementioned State Clearinghouse item and has the following comments: The Bureau of Air Quality is currently reviewing a PSD application submitted by Sierra Pacific Power Co. Several aspects of the plant have changed since the EIS was initially prepared, including the location of the proposed unit, stack height, the meteorological data, etc.

PSD PERMIT

**RESPONSE:** Changes to the proposed project have been incorporated into the Final EIS, and are designated with bold italics type. A summary of the design refinements is provided in section 2.0 and analyses of impacts have been integrated in Chapter 4 on environmental consequences of the Final EIS.

- 51: Tim Carlson, Commission on Economic Development, Written Comment, 7/20/94 (Received after 7/23/94)
- 51-a The intent of this memo is to convey my support regarding the Draft Environmental Impact Statement for the proposed Piñon Pine Power Project. Executive Director of the Commission on Economic Development, I view this project as a positive step in the enhancement of economic development in Northern The development of this innovative and Nevada. technologically advanced power plant demonstrates Sierra Pacific's desire to provide continued reliable service at cost-effective measures yet, remaining environmentally conscious. All preliminary indications suggest that Sierra Pacific and DOE have taken the necessary steps to ensure the preservation of the environment by thoroughly evaluating all elements that draw concern. Careful planning and a strong commitment to the protection of the environment must be maintained for continued success of this project. My staff and I realize the importance of this project for the surrounding communities and Sierra Pacific Power Company. We will continue to support projects that enhance economic development and renders a positive impact on the State of Nevada. If you have any

**GENERAL** 

questions or need additional comments, please do not hesitate to contact me at (702) 687-4325.

**RESPONSE:** Comment is noted.

- 52: Eugene M. Hattori, Department of Museums, Library and Arts State Historic Preservation Office, Written Comment, 6/7/94 (Received after 7/23/94)
- The Nevada State Historic Preservation Office (SHPO) reviewed the subject draft environmental impact statement. The document adequately considers cultural resources as per the National Environmental Policy Act of 1969. Our only comment is a recommendation to remove the Historic Properties Inventory and Archaeological Site Evaluation from public access in the reading rooms. The Archaeological Resources Protection Act of 1979 exempts archaeological site location and content information from the Freedom of Information Act due to the ongoing problem of site vandalism. Please contact me at (702) 687-6362 if you have any questions concerning this correspondence.

**DUPLICATE** 

RESPONSE: This comment was previously addressed. Please see Response to Comment 36-a.

- 53: Sister Margaret McCarren, Postcard, no date (Received after 7/23/94)
- 53-a I regret that I was unable to attend your last meeting, and that this reply is so tardy. My 90-years, sometimes prevents my ability to do all that I'd like, and my secretary has been incapacitated for several weeks. I do approve of your plan to utilize a process that converts coal to gass [sic], and have faith in your good business practices.

**GENERAL** 

**RESPONSE:** Comment is noted.